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61st Congress, 3d Session | SENATE | Report No. 1272

REPORT OF COMMITTEE

AND

HEARINGS

HELD BEFORE THE

SENATE COMMITTEE ON MANUFACTURES

RELATIVE TO

FOODS HELD IN COLD STORAGE

WASHINGTON
GOVERNMENT PRINTING OFFICE
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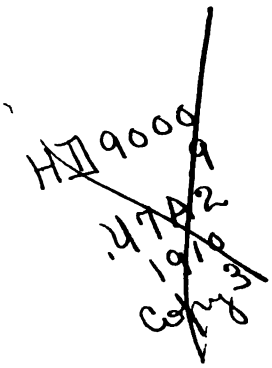

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JUL 6 1915

61ST CONGRESS, 3d Session. | SENATE. | REPORT No. 1272.

FOOD IN COLD STORAGE.

MARCH 3, 1911.—Ordered to be printed.

Mr. HEYBURN, from the Committee on Manufactures, submitted the following

REPORT AND HEARINGS.

[To accompany S. 7649.]

The Committee on Manufactures, to whom was referred S. 7649, a bill "to prevent the sale or transportation in interstate or foreign commerce of articles of food held in cold storage for more than one year, and for regulating traffic therein, and for other purposes," having taken testimony and obtained a large amount of information in regard to the subject matter of the proposed legislation, submit these considerations as the premises for the proposed legislation on the subject, with the following recommendations:

Strike out all after the enacting clause and insert the following:

SECTION 1. That no adulterated or misbranded food product not conforming to the requirements and restrictions of this act and the regulations made under its authority shall extend into interstate or foreign commerce or be sold or offered for sale within the District of Columbia or within any district, Territory, or possession of the United States.

SEC. 2. That any of the hereinafter named articles of food which have been held in cold storage for more than the period hereinafter designated, to wit:

Beef, or the manufactures or products thereof, seven months;
Veal, or the manufactures or products thereof, four months;
Pork, or the manufactures or products thereof, four months;
Sheep, or the manufactures or products thereof, four months;
Lambs, or the manufactures or products thereof, three months;
Poultry, or the manufactures or products thereof, three months;
Game, or the manufactures or products thereof, three months;
Fish, or the manufactures or products thereof, three months;
Eggs, or the manufactures or products thereof, three months;
Butter, or the manufactures or products thereof, three months;

or any article of food, which having been held in cold storage for any period of time, has been removed therefrom and returned again to cold storage shall be deemed to be adulterated within the meaning of this act.

SEC. 3. That any article of food which has been held in cold storage or the package cantaining it, or from which it is sold, shall fail to bear a label plainly and correctly stating the date of production, killing, packing, or manufacturing, and the period of time during which the article has been held in cold storage, shall be deemed to be misbranded within the meaning of this act.

No food product having been once placed in cold storage and removed therefrom shall again be placed in cold storage.

When any package containing such food products as above designated shall be broken and the contents thereof sold by items, then the seller shall, at the request of the purchaser, correctly state the information above required to be placed upon the original package, upon a tag to be attached to such item before delivering the same to the purchaser. The container from which such article is sold shall be in plain view of the purchaser or on demand produced for inspection by the purchaser.

SEC. 4. That every person who places any food product in a package or container bearing a false or fraudulent statement as to the quantity, quality, or character of the contents thereof, or as to the date of production thereof, or in regard to the time of placing the same in cold storage or its removal therefrom, or makes any false statement upon said package or container in regard to the contents thereof, or places or causes or allows to be placed any fraudulent brand, mark, or statement upon said package or container, shall be deemed to be guilty of misbranding.

SEC. 5. That the term cold storage as used herein shall be construed to mean the deposit of food products in warehouses, buildings, or other receptacles where for a longer period than ten days the temperature is artificially kept at forty degrees Fahrenheit or below, except when the products are actually in transit and have not previous to such transit been in cold storage.

SEC. 6. That any of the hereinbefore-named articles which may have been frozen in cold storage shall not be sold or offered for sale except in a frozen condition, and any such product which, having been once frozen has thereafter been thawed, inflated, injected, or in any way manipulated so as to alter its appearance and make it resemble a fresh, unfrozen product, shall be deemed to be adulterated.

SEC. 7. That no food product enumerated above shall be placed in cold storage if diseased in any way, or if not caught, handled, or slaughtered in a sanitary manner, or if not properly cooled as provided by the regulations herein provided to be made for the sanitary preparation of such products for storage; and any product stored without conformity to this act and to the regulations made in pursuance of this act shall be deemed to be adulterated and misbranded and subject to all the penalties provided therefor.

SEC. 8. That the President is empowered and authorized to make such rules and regulations in conformity with the provisions of this act for the inspection of articles of food coming within the provisions of this act, and in aid of its enforcement, as shall be necessary to insure the full compliance therewith.

SEC. 9. That any person, persons, association of persons, or corporation guilty of misbranding or adulterating any food product, or of the violation of any of the provisions of this act shall upon conviction therefor be subject to a fine of not less than one hundred dollars or more than five thousand dollars and to imprisonment for a period of not less than six months or more than ten years.

SEC. 10. That all the provisions of this act shall be applicable within the District of Columbia and in any Territory, district, or insular possession of the United States, and to all food products placed, carried, or kept in interstate or foreign commerce.

Amend the title by striking out the words "one year" in line 3 and inserting in lieu thereof the words "the time herein specified."

Section 1 makes provision against the sale or shipment of adulterated or misbranded food products.

Section 2 defines adulterated food products.

Section 3 provides for the labeling of food products.

Section 4 provides against false branding or labeling.

Section 5 defines the meaning of cold storage.

Section 6 provides against the selling of food products that have been frozen after they have been thawed.

Section 7 provides against the placing of diseased or unhealthy food products in cold storage.

Section 8 provides for making the necessary rules and regulations in regard to the inspection of food products.

Section 9 provides for the penalties and punishment for the violation of this act.

Section 10 defines the limit of the application of the provisions of this act.

PURPOSE OF LEGISLATION.

First. To protect the health of the people.

Second. To protect the consumer against imposition and fraudulent practices.

Third. To preserve the food product against waste that it may be available to the consumer throughout a greater length of time and that the supply may be so adjusted to the demand as to avoid periods of dearth or oversupply of food products.

The first purpose of the legislation stated, "to protect the health of the people," is first in importance.

Processes of preservation which so change the nature of food as to render it injurious to health may be considered separately from that class of preservatives which only diminishes the quality of the article as to value.

The first class calls for prohibitive legislation.

All the people are interested in the preservation and protection of the general public health from impairment or destruction for reasons so obvious as to make it unnecessary to do more than state the fact here in presenting the general subject.

The first purpose of this measure is to supply protection to the actual consumer against such consequences as flow from that class of attempted or professed food preservation which deceives the user into the belief that the article is healthful when as a fact it is injurious.

The preservation of food products is of the greatest importance to both the producer and the consumer; the question we have to consider is as to the method and manner of preservation.

Preservation methods such as those with which we are dealing are of recent origin, and little assistance to the solution of present questions can be gained from a review of the past regarding the preservation of food products.

The drying process as applied to most food products when unaccompanied by the use of so-called "preservatives" is generally free from objection on the score of healthfulness and in some forms has been practiced in all ages; there is, however, ground for considering the "preservatives" used in connection with the drying process. One in general use is smoking over a wood fire, the preservative element in the smoke being creosote. The genuine smoked meat is perhaps free from objection, but the use of pyroligneous acid or "liquid smoke" should be classed with "food preservatives" subject to legal regulation and control.

It is difficult to consider the question of the storage of food products independent of the various accompanying steps which enter at different stages into the process of handling the product from first to last; but we must keep in view the effect of each and every item entering into the process.

In any case the condition of the article as to its healthfulness or fitness for food must be the first subject of consideration and control.

If the cow which produces the milk is so affected as to affect the milk, then that cow should not be allowed to contribute to the milk supply.

If the animal is in an unhealthful condition, such animal should not be allowed to enter into the food supply of the country in any form; and so with any basic article of human food.

It is not enough, however, to see that the animal is in a perfectly healthful condition when producing milk or when slaughtered for market; the demand for healthful origin, surroundings, and conditions must extend to and cover every step and every period of time up to the consumer, and upon the premises that the health of each and every person is a matter of public concern and consideration rests the responsibility to exercise legislative control over conditions upon which the health of the public rests.

Section 2 deals with the length of time during which the several enumerated articles may remain in cold storage.

The times fixed in the section are the result of a very careful consideration of the wisdom of cold storage, first, as it affects the general health of the people, and second as it relates to the question of the supply and demand of food products in the daily relation of the people to their market.

While the committee was unable to procure testimony or statements covering the entire scope of preservation and storage of food products, it has to the extent of its ability under the conditions surrounding the investigation been enabled to obtain such figures as will with reasonable accuracy represent the situation relative to the supply and demand as it bears upon the selling and purchasing market for food products. The investigation in this particular is strictly within the scope of the jurisdiction of the Committee on Manufactures.

The condition of the live animal afterwards entering into food products is very important. It will be conceded that the flesh of an animal in an unhealthy condition when alive is objectionable as an article of food after being killed, and should therefore be excluded from food products which may be preserved or cured in any way for subsequent use, and certainly should not become a part of the great body of foods preserved by cold storage and otherwise to be consumed under circumstances where it would probably be impossible to detect without scientific investigation the unhealthy condition of the live animal.

A comprehensive analysis of the testimony received by the committee in regard to quantities and values of food products produced and stored is to be gathered from the condensed reports of the Cold Storage Association:

Statement of values of products that enter cold storage yearly.

[From the "Refrigeration Industries in the United States."]

Meats chilled or preserved by cold by packers	$1,500,000,000
Goods placed in commercial cold-storage warehouses	350,000,000
Brewery products refrigerated	325,000,000
Dairy products in cold storage	30,000,000
Fish frozen or in cold storage	30,000,000
Eggs placed in cold storage	21,000,000
Poultry frozen or in cold storage	45,000,000
Apples placed in cold storage	15,000,000
Other fruits and vegetables handled under refrigeration	40,000,000
Ice cream and ices	45,000,000
Furs and fabrics held in cold storage	60,000,000
Ice, natural and manufactured	60,000,000
Goods stored in chill rooms of produce merchants, wholesale meat and provision dealers, etc. (estimated)	250,000,000
Goods artificially chilled in bleacheries, dye houses, oil refineries, powder works, chemical works, photographic plate works, etc. (estimated)	250,000,000

The following statement of Victor H. Becker, of Chicago, Ill., is instructive:

The value of the products which pass through the refrigerating rooms in the course of trade during a year is upward of $2,500,000,000. This appears in the testimony of Victor H. Becker, of Chicago, Ill., on pages 181–182 of the printed testimony. Mr. Becker is a refrigerating engineer and resides in Chicago. He has been for 36 years engaged in the refrigerating business in all of its branches (p. 178). Mr. Becker has given the committee much valuable information in regard to cold storage, which will be found in his testimony from page 178 to 192. These statistics deal with the quantities of food products produced and stored in the United States. He gives the present quantities of certain food products as follows:

Eggs: 21,500,000,000, equal to 60,000,000 cases, 5 per cent of which is 3,000,000 cases, the quantity actually placed in cold storage in 1909.

Butter: He gives the total quantity of butter in cold storage the latter part of August, 1909, from 80,000,000 to 85,000,000 pounds, which would be about 5 per cent of the total production of butter in the United States.

The Associated Warehouses, comprising 301 cold-storage warehouses, on December 1, 1909, held 37,465,625 pounds of butter. Most of the long-storage butter goes into the cooler in May, June, and July, when the cows are fresh and have plenty of fresh grass. The production during these months is in excess of the market needs.

Out of the production of 30,000,000 to 60,000,000 barrels of apples produced yearly the cold-storage warehouses receive between 3,000,000 to 5,000,000 barrels.

The value of the fresh meat going into refrigeration annually is about $1,500,000,000. The quantity of poultry frozen and held in cold storage is about 1,000,000,000 pounds, valued at $45,000,000. The value of eggs placed in cold storage yearly is about $21,000,000. The value of butter placed in cold storage yearly is about $25,000,000. Cheese placed in cold storage annually is valued at about $5,000,000. Frozen fish held in cold storage annually is valued at about $30,000,000. The value of apples, fresh and dried, placed in cold storage annually is from twelve to fifteen million dollars.

The following table will show in part the quantity of food products produced and the quantity held in cold storage during the year ending June 30, 1910, in six of the large packing houses in Chicago and the Middle West:

CATTLE.

Head.	Weight.	Placed in cold storage.	Per cent placed in cold storage.	Length of time held in cold storage.		
				Maximum.	Minimum.	Average.
	Pounds.	*Pounds.*				
1,286,082	700,694,000	28,760,000	4.1	1 year to 15 months.	1 week	7 months.
696,849	424,520,439	7,710,105	1.816			
222,281	133,417,152	7,337,973	5.5	8 months	3 days	3 months.
826,180	438,037,244	33,568,700	7.66	1½ years	10 days	9 months.
531,284	284,440,000	9,644,315	3.4	13 months	3 days	5 months.
1,301,465	652,279,935	46,545,700	.071	15 months	24 hours	7 months.
4,864,141	2,633,388,770	133,566,793				

SHEEP.

Head.	Weight.	Placed in cold storage.	Per cent placed in cold storage.	Length of time held in cold storage.		
				Maximum.	Minimum.	Average.
	Pounds.	*Pounds.*				
2,606,120	105,416,000	1,542,000	1.46	1 year to 15 months.	1 week.....	7 months.
828,535	32,839,993	126,500	.385	.....	.....	
452,204	18,352,789	365,587	2.0	8 months.....	3 days.....	3 months.
919,246	38,339,830	1,098,500	2.86	1½ years.....	10 days.....	9 months.
649,495	27,207,000	266,148	1.0	13 months.....	3 days.....	5 months.
1,628,231	67,091,504	745,343	.011	15 months.....	24 hours.....	7 months.
7,083,831	289,247,116	4,144,078				

CALVES.

498,420	60,959,000	1,093,000	1.8	1 year to 15 months.	1 week.....	7 months.
96,394	9,984,164	.....	.....	.....	.....	
11,976	1,479,855	145,476	9.82	8 months.....	3 days.....	3 months.
177,903	18,228,731	557,200	3.06	1½ years.....	10 days.....	9 months.
106,391	13,687,000	170,837	1.2	13 months.....	3 days.....	5 months.
301,630	38,736,150	938,918	.024	15 months.....	24 hours.....	7 months.
1,192,714	142,974,900	2,905,431				

HOGS.

3,821,567	620,551,000	13,317,000	2.14	1 year to 15 months.	1 week.....	7 months.
926,761	145,929,503	1,876,396	1.286	60 to 90 days..	.....	
346,872	63,787,939	201,362	.31	8 months.....	3 days.....	3 months.
1,374,448	215,237,390	1,977,000	.92	1½ years.....	10 days.....	9 months.
1,601,131	287,260,000	2,621,273	.09	13 months.....	3 days.....	5 months.
3,324,109	516,902,614	16,608,756	.032	15 months.....	24 hours.....	7 months.
11,294,888	1,849,668,446	39,601,787				

EGGS.

Purchased.	Placed in cold storage.	Per cent placed in cold storage.	Maximum.	Minimum.	Average.
Dozen.	*Dozen.*				
12,634,873	7,155,318	56.8	15 months.....	1 week.....	7 months.
600,000	600,000	.....	9 months.....	10 days.....	4½ months.
244,950	244,950	.....	.....	.....	
13,479,823	8,000,268				

BUTTER.

Weight.	Placed in cold storage.	Per cent placed in cold storage.	Maximum.	Minimum.	Average.
Pounds.	*Pounds.*				
7,279,930	4,009,324	55	15 months.....	1 week.....	7 months.
204,647	204,647	.....	4 months.....	3 days.....	2 months.
1,020,000	.....	.....	10 months.....	10 days.....	5 months.
1,015,498	1,015,498	.....	.....	.....	
10,395,716	10,395,716	.....	16 months.....	4 days.....	6 months.
19,913,791	15,625,185				

POULTRY.

19,659,629	11,094,266	56.4	15 months.....	1 week.....	7 months.
7,179,162	7,179,162	.....	16 months.....	4 days.....	6 months.
26,838,791	18,273,428				

The following special reference to foodstuffs is submitted:

BEEF.

The value of meats chilled, or preserved by cold, by the packers during the last year, as appears by the table printed herein, was $1,500,000,000.

There is a great difference of opinion in regard to the time in which meat may be safely held in cold storage without deteriorating in healthfulness, or as it affects the market of the producer and the price to the consumer.

In the regard to the first, a reference to the testimony contained in the hearings, which will be readily found by referring to the index thereto, would seem to make it unnecessary to make extended special mention of it here.

The bill provides in section 2 that beef shall not be held in cold storage to exceed seven months.

VEAL, PORK, SHEEP, AND LAMBS.

These are what are generally termed "small meats," and the time limit prescribed in section 2 of the bill governing the period of cold storage for this class of meats is based upon a careful consideration of the testimony which will be found in the hearings under a proper head.

FISH.

The item of fish is not the least important in considering cold storage in its effect upon the health of the people and upon the market. The testimony of Dr. Wiley on pages 7, 8, and 9 of the hearings in regard to the effect of cold storage upon fish will be found very instructive when taken in connection with the large amount of testimony found in the hearings in regard to fish, and fully justifies the conclusion of the committee with reference to the restrictions upon the cold storage of fish.

POULTRY.

The bill provides that poultry can remain in cold storage not to exceed three months. This limitation has been decided upon after a consideration of all of the testimony, oral or written, offered before the committee.

A single firm in Chicago during the year ended June 30, 1910, placed in cold storage upward of 12,000,000 pounds of poultry, which was more than 56 per cent of the quantity purchased by this concern during that period, thus showing about the per cent of poultry that is placed in cold storage during a year.

EGGS.

It is claimed that there is a necessity and an advantage in the cold storage of eggs in each city. For example, in New York City the egg receipts on April 20, 1910, were 43,000 cases of 30 dozen each—equal to 1,290,000 dozen, and for the week ending April 23, 1910, the receipts were over 200,000 cases of 30 dozen each. The week before the receipts were 192,000 cases. The demand of the city for consumption during that period was about 12,000 cases per day; thus the city of New York alone consumes 360,000 dozen eggs per day. This is said to be the minimum consumption. Some estimate the receipts as high as 40,000 cases per day with a daily consumption of only 12,000 cases, which would evidently result in an accumulated surplus, or a waste or slump in prices, and the surplus would have to be placed in cold storage. It is claimed that this surplus when carefully inspected by candling if placed in cold storage will retain its quality for a period of several months. This fact is controverted by the testimony of experienced men who have made a careful study of the question. It is very evident from the testimony that there is a material difference between the keeping capacity of eggs produced at different seasons of the year, so that we must take into account the amount of the product and of the surplus during those months when production is greatest. More eggs go into storage in Chicago than in New York City, and the season of production differs in the section of the country from which Chicago draws its eggs. The receipts of eggs in Chicago for January, 1910, was about 65,000 cases, and for April in the same year the receipts were over 773,000 cases. For the same months in the same year the receipts in the city of New York were 137,408 and 723,257, respectively

The average quantity of eggs placed in cold storage in New York City (including Jersey City) each year is about 700,000 cases, and in the city of Chicago about 1,000,000.

It is claimed that the cold-storage supply is drawn upon whenever the supply of fresh eggs falls below the market demand, and that even in August, September, and every month thereafter eggs are withdrawn from cold storage, that the largest quantities go out in December, and that January usually cleans out the cold-storage eggs. About that season it is claimed that fresh eggs from the South begin to arrive in considerable quantities, causing the market price to fall below the point where profit is possible in cold-storage eggs, and cold-storage

eggs are consequently withheld from the market until the season arrives when they can be sold at a profit as against any eggs.

There is a strong showing made in support of the proposition that the people always trade with the oldest stock, and that when new eggs come into the market they are withheld from the public in order that eggs already becoming deteriorated from storage may pass out. The reason for this is obvious, and this is true of all cold-storage goods. The storage proprietors push out the old stock and retain the new, sometimes until it is very old. They speak in justification of the wisdom of cold storage, of the facility with which a depleted market may be supplied from cold-storage supplies, and draw rather discouraging pictures of the condition of the market and the people in the event there was no reserve source of supply. There is some merit in this proposition, but it is not all clear advantage to the consumer or to the producer. Very often when the producer should be supplying the consumer with fresh produce the cold-storage men will undersell the producer of the fresh materials by reason of the surplus which they command in cold storage and of which they must get rid, thus making a sharp and unhealthful competition, not between the producer of foodstuffs of the same rank and grade, but between the storagemen carrying large stocks of old stock in reserve and the producer of fresh stock, who must get rid of his goods either to the consumer directly or, in the event of being supplanted in the market by cold-storage men, to the cold-storage men at their own prices Both phases of this question are worthy of consideration.

No eggs should be placed in cold storage that are produced during the hot months. It is an ascertained fact that they are of an inferior quality in every respect. The testimony would indicate that such eggs as are produced during warm months will not, under the most favorable conditions, remain fit for use over three months, and that more often in less than a month they are utterly unfit for human food.

A very large trade exists in broken and inferior eggs. These eggs are placed in barrels and frozen at any time of the year, and often regardless of the condition of the eggs. Thousands of tons of this product are continually in cold storage and are known by the name of cooking eggs, and by other names given them as a disguise. There have been several recent cases brought to the attention of the courts in which rotten eggs were found in transit from cold storage to bakeries and confectioners in some of our nearby large cities, and were duly confiscated under existing law. Certain dealers in such article on a very large scale recently applied to the committee for recognition in legislating upon the matter, claiming that this was a legitimate trade and protested against being discriminated against as dealers in food products. The facts were such as to preclude the possibility of giving recognition to any such trade. They admitted that they dealt in eggs regardless of whether they were fresh or not, claiming also that inasmuch as they marked them "cooking eggs" that that was a sufficient designation to protect the public.

The difficulty with this proposition is that this foul product goes into bakeries and confectioneries and is used as a basis for food products in constant daily use by the people, and it is equally plain that the people should be protected from an imposition or fraud the basis of which is rotten or unfit eggs.

Within a few days the president of a large packing house in Chicago said, in speaking of eggs:

There are eggs in Chicago which have been in storage 24 months. They were unfit for food 18 months ago. One concern offered by circular letter to sell its eggs at 2½ cents per pound, claiming that they had been spoiled in cold storage. The price is equivalent to 2 cents per dozen.

The writer suggests that it has never been known where a lot of this poisonous food had been disposed of, but it has always found its way into the consuming public's stomach. The fact is that the bulk of these eggs, which are called seconds, spots, or rots, when they are placed in cans in cold storage are absolutely unfit for food, but when smashed, mixed together, and frozen as solid as a rock, it is almost impossible for the baker or consumer to know how good or how bad they are.

The following table will show the quantity of eggs in the New York market and the average price for the years specified:

Years.	Quantity.	Average price.	Years.	Quantity.	Average price.
	Cases.	*Cents.*		*Cases.*	*Cents.*
1898	2,594,992	15½	1907	4,426,614	22.19
1900	2,911,818	17 7/19	1908	4,116,269	22.19
1905	3,581,631	22.22	1909	4,256,320	25.03
1906	4,086,151	22			

Your committee recommends that the bill pass as amended.

HEARINGS BEFORE THE SENATE COMMITTEE ON MANUFACTURES TO INVESTIGATE FOODS HELD IN COLD STORAGE

ROOM 329, SENATE OFFICE BUILDING

INVESTIGATION OF FOODS HELD IN COLD STORAGE.

MONDAY, APRIL 25, 1910

WASHINGTON, D. C.,
Monday, April 25, 1910—10.30 a. m.

The Senate Committee on Manufactures met pursuant to the call of the chairman in the Senate Office Building.

Present, Senators Heyburn (chairman), Lorimer, Frazier, and Smith.

Dr. Harvey W. Wiley, Chief, Bureau of Chemistry, Department of Agriculture, and Pierre P. Garven, prosecutor of the pleas, Hudson County, N. J., appeared.

The CHAIRMAN. Pursuant to the order of the last meeting, we will hear parties and will file statements in regard to this matter. If it is agreeable to the committee, we will call Doctor Wiley, the Government chemist, and ask him some questions.

Doctor, would you kindly take a seat here at the table with us and give us the benefit of your information? I would like to say to you, if there is any point in your testimony where you feel it would add to the convenience for you to step aside and let some one else fill in an idea, we would be governed by your idea on that. You, perhaps, know what other men know better than anybody else. Doctor, the committee desire to know the facts in regard to the effect of cold storage on food, commencing, we will say, with poultry, and you doubtless are sufficiently familiar with the question to render it unnecessary to ask you specific questions; so you can proceed with your statement. We want to know the preliminary effect as well as the ultimate effect; that is, as to time and conditions.

STATEMENT OF DR. HARVEY W. WILEY, CHIEF BUREAU OF CHEMISTRY, DEPARTMENT OF AGRICULTURE.

Doctor WILEY. Mr. Chairman, under the authority of the appropriation act of several years ago, and which was continued for a number of years, I have investigated the effects of cold storage upon decomposition, palatability, and wholesomeness of various articles which are commonly placed in cold storage pending delivery to the consumer, excluding all articles which in themselves are known to be preserved, such as cured meats, fish, and distilled and fermented beverages; these and other articles which are known to be improved, in fact, which require age to make them better. I confined my investigations to those articles which are usually sold presumably in a fresh state to the consumer. My investigations have extended over poultry, fish, eggs, meats, fruit of all descriptions, and various other substances, such as game and things of that kind. Now, specifically in regard to poultry—and what I say about poultry, mutato nomine, might be said about these other things.

We began this investigation by sending a circular to all the cold-storage warehouses whose addresses we could get, reciting the authority of Congress to make this investigation, and asking collaboration and help. We felt, of course, that the first thing that we should do would be to find out from the trade as near as possible the present state of the cold-storage industry, and to solicit their collaboration and sympathy in correcting any evils which might have been produced by the conditions which exist. I shall furnish a copy of this circular for filing with your report, and also the answers thereto.

The CHAIRMAN. Yes; mark it for identification; that is, indicate that it will come in at this point in the testimony.

Doctor WILEY. I should have brought it up this morning only I thought that I should not be called upon—just to come to listen to what was said. I submitted this same report to the House committee, and a duplicate of it will be submitted to your committee. Now, the conditions which we found were what you might expect from an industry which had absolutely no control over certain demands of the trade and the organized persons engaged in the trade. We found that there was no uniform system of inspecting products which went into cold storage; almost anything which was brought to a cold-storage man—he didn't own the goods; he was paid for keeping them; it wasn't his business to inquire into their nature or character. Practically anything which was not flagrantly decayed, and so forth, would be accepted under such circumstances, and properly so, as far as I can see. As to the holding of these goods, there was no uniform time at all. They were held until there was some demand for them in the market. Usually, of course, they were sold within a year—were expected to be. If they were not, there was no objection, legal or otherwise, so far as the warehousemen knew, of disposing of them as long as he received the compensation for the storage charges. So, there was no uniformity.

We asked, generally, of this man to tell what he kept in cold storage, how long was the average period of the storage, and what were its extreme periods or maximum periods; and we got a very full, and no doubt truthful account of the present conditions at that time of the industry. At the same time we instituted a method of investigation which we followed for many years, of examining the products in cold storage and comparing them chemically or organoleptically with the same products fresh. Of course we couldn't compare the same animal in both sets as they show the skull of Mozart in a museum in Vienna when he was a boy of fourteen and after his death; but we got as nearly equal conditions as possible; that is, if we had a poultry in cold storage we would weigh it and see how much it weighed, and then we would compare it with a fresh piece of as nearly the same weight as we could get it. This was done by chemical examinations to detect whether or not there were any changes in decomposition, chemical changes, which was done by histiological examination, studying the appearance of the tissues under the microscope to see if they had undergone any changes, and that was followed by having cooked the fresh article and the stored article in exactly the same way—not in the same dish or same stove, but prepared in the same way, and then being presented to a jury, which was a continuing jury of half a dozen, the articles being simply brought to each plate, no one knowing which was the cold storage product and which was

not, the purpose being to determine from the taste which was the more palatable. We have published a number of tabulations.

The CHAIRMAN. Have you any of those tabulations, or can you refer us to them?

Doctor WILEY. I will submit copies with the other copies.

The CHAIRMAN. At this point in the testimony just note that Doctor Wiley will submit copies.

Doctor WILEY. I will submit copies of these tabulations.

The CHAIRMAN. Those who may be opposed to this bill or this class of legislation would be entitled to see those pamphlets, so if you can have them sent for at a conveniently early time——

Doctor WILEY. Having these exposed as briefly as possible, the purpose and method of the examination—I might begin by taking up the subject the chairman has suggested, namely, the poultry industry. There are two methods of bringing poultry into the market: One is the shipment of the live chickens to some of the centers of population and having them slaughtered and sold at the point of consumption; another is to have the chickens killed at the point of production and put into cold storage and shipped in refrigerator cars to the point of consumption. I will not take up any time in giving you my idea of the comparative merits of these two methods, but simply state that those are the two methods which are commonly employed. Both methods exist in this city; both live chickens and cold-storage chickens are sent here.

The results of our investigations on poultry show—I forgot one important thing—we ourselves started the cold-storage materials; that is, we purchased and killed chickens ourselves after careful inspection of their condition to see if they were sound and healthy, and we placed those in cold storage, together with many other substances, so that we had a complete history of each individual carcass from the time it was killed until the time it was finally examined in the laboratories. Some of these investigations are still going on; we still have some of these deposits in cold storage which we have not yet examined. We make our examinations close every three months on the goods of this kind.

The CHAIRMAN. In your own plants?

Doctor WILEY. In our own plants—we had no plant of our own, but we hired spaces in the storage warehouse which were reserved solely for our own use. We make these determinations once every three months, supposing that was about the time when any changes which would be induced would be of a sufficient magnitude to be discernible. The results of these examinations briefly are as follows: That at the end of the first three months the jury's verdict in regard to the taste of the articles was wholly unsatisfactory as to being able to discriminate between the cold storage bird and the freshly killed bird; about as many preferred the one as preferred the other. After a number of determinations of that kind on this as well as other subjects, we came to the conclusion that there was no perceptible deterioration of flavor in the space of three months. In the second period of six months there was a very preponderating testimony in favor of the freshly killed bird, but there were still numerous instances where a juryman would select the six months bird as being superior in flavor to the fresh bird, but there was such a preponderating vote that we assumed from this fact that a considerable de-

terioration in taste had taken place at the end of six months. At the end of nine months it was a rare thing for any man on the jury to make any mistake in regard to which was the cold-stored and which was not. Occasionally there would be, as you might expect in all juries generally—there would be one man on the jury who was obstinate; but the verdict was nearly always unanimous. At the end of the year there was no instance, as far as I can remember, of any juryman having preferred the cold-storage bird.

My own conclusion from a study of numerous tests of this kind is, that nine months is the limit of storage so far as chickens are concerned without distinct impairment of flavor; and applying that to wholesomeness, I can only say that the chemical examinations of these cold-stored birds at nine months and twelve months failed to reveal the development of any so-called poisonous decomposition of the product as far as chemistry is concerned. There was no trace of any such body as far as we could determine by chemical means. Without infections of animals, there was no trace of any such body as that which is commonly known as ptomaine, which is a very common product of the decomposition of flesh; and I infer from that, that, judged by chemical means, there was no objection to cold-storage fowls of the age of nine months, or even twelve months, as far as the development of any poisonous product was concerned.

The CHAIRMAN. I will ask you at that point: Was there any difference in regard to the condition assumed by the fowl after being taken out of cold storage; that is to say, was there any rapid reaction or tendency to putrefaction after being taken out of cold storage?

Doctor WILEY. That I was coming to later, but I would as soon give it to you now. There is no doubt that the removal of a chicken or any other frozen product from cold storage and thawing it tends to accelerate the process of decomposition; there is no doubt about that at all. For that reason I am very much in favor of requiring that frozen products, such as poultry and fish, should be deemed to be adulterated unless sold in the frozen state without ever having been thawed. In my opinion, some of the gravest charges against cold-storage products do not lie against the cold storage as such, but they lie against these products which are removed from cold storage and then not sold promptly to the consumer.

There are two reasons why a frozen product, such as a chicken or a fish, should be sold frozen: One is the tendency to rapid deterioration after thawing, which I have just mentioned; the other is that the thawing is for the purpose of making it assume—that is, probably for the purpose of making them assume as nearly as possible—the fresh condition. We have abundant evidence that the thawing of these animals is for the purpose of deceiving—that is, fresh blood having been brought and put on the gills of the fish and the mouth of the chicken after being thawed.

The CHAIRMAN. Is it true that they polish up the eyes of the fish right in this market?

Doctor WILEY. I couldn't say.

The CHAIRMAN. A man has told me that.

Doctor WILEY. There is no trouble about a person, even one who is not an expert, telling the frozen fish or chicken from the fresh through the changed appearance indicated on the bird; but there is difficulty for a man who is not an expert sometimes to tell the

thawed and expanded chicken and fish from the fresh, so there is an element of danger in that line, and especially when it is known that he can not always dispose of an article the moment it is brought on the shelf and exposed for sale. You may thaw out your chicken to-day and you won't sell it until to-morrow. It may be kept two or three days in a thawed state, and thus subjected to a more rapid decomposition. Now, the freezing of flesh naturally accelerates the cells by the expansion of the reaction which they attain when frozen, so that the character of the flesh is considerably changed, as shown by histological investigation; as, for instance, you know an egg will burst its shell on freezing, and wine or beer which is frozen, even after thawing, is never fit for drinking again. If you freeze whisky, it spoils its flavor and character. While the freezing of flesh does not do so to so great a degree, I am inclined to think that the mere act of freezing to a certain extent impairs the quality of flesh. But having been frozen and having its vitality—because that flesh is still alive—having its vitality thus impaired still more renders it a more easy victim to any disorganizing influences to which it may be subjected on thawing. Hence, I should like to see this bill amended to the degree that small frozen products, such as game and chickens and fish, shall be deemed to be adulterated if not sold in the frozen state.

Now, to return to the recital, which I will make as brief as possible. The digestive processes in frozen poultry are not inhibitory to auto-digestion. All organic matter, when it has performed its function, naturally tends to decay. That is a law of nature; it is a law of life. If you did not have decay you would not have life. Hence the tendency is for organic matter, both plant and vegetable, to return to its elements and thus to be used over again. And freezing does not inhibit that process, though it greatly restricts it; that is, one factor of decomposition is temperature. The higher the temperature up to a certain point, the more rapid the decomposition. If you raise the temperature you accelerate the decomposition, like the sterilization process, and the lower the temperature the slower the decomposition. But the poultry that is kept far below the freezing point will show under the microscope, as you will see in these documents which I will give you, distinct auto-digestion, especially the coats of the stomach and the intestines, and most of the poultry is packed with the intestines in them. I have no objection to that if they are not kept too long. Not only that, but the fibrous muscles show auto-digestion very distinctly on long keeping; that is, after six months it is plainly visible.

The CHAIRMAN. While they are yet frozen?

Doctor WILEY. Yes, sir; while they are frozen. So that the idea that freezing will preserve indefinitely is contrary to the scientific facts, but the idea that it will retard very markedly the process of decomposition is true; otherwise it would be of no use. And I want you to understand that I am a great believer in the cold-storage industries. I think they are a great blessing to the people of this country, and my idea is to place them on a still better foundation, so that the people will have more confidence in them than they have now, so as to increase their efficiency for good.

A bill like this, if enacted into law, in my opinion will certainly help to give confidence to this great industry and will be more remunerative to those engaged in it and more beneficial to the people at large.

Therefore I might say, I think, without fear of successful contradiction—I think that is a phrase often used——

The CHAIRMAN. Frequently you may have heard that.

Doctor WILEY. And often proved to be untrue; it may be in this case—that there is progressive decomposition of a cold-stored product from the day it is put in until the day it is taken out. These changes which I have described are not suddenly developed; it does not keep up just as good as it was when it was put in and then suddenly become bad.

Senator SMITH. Isn't the condition of the subject—for instance, the particular bird, which may be in a bad condition when put in cold storage—this particular one may give evidence of deterioration more markedly than another that was in a healthy condition?

Doctor WILEY. I am coming to that, Senator. That is a very important point not covered in this bill.

Senator SMITH. I wanted to clear that up, for the reason that this bill does not cover that.

Doctor WILEY. Yes; that is an important omission in that bill. That point is one of the most important in connection with this whole industry, to see to it that when the goods go to the warehouse they are in a condition to go in. That is a most important point.

Now, I am fully convinced, Senator, that a cold-stored product may go fifteen months or eighteen months or two years and still not be injurious to health in the sense of developing any poison, and still be eatable. I would much rather eat it than starve.

The CHAIRMAN. If eaten right at once?

Doctor WILEY. When taken out, of course. So that bill simply ought to limit this to nine months or twelve months, whatever happens to be the limit; I would not be particular; but when you consider that this progressive change is going on, and all that change is for the bad, the best way to insure the wholesomeness of that food—because I am going to show you that bad-tasting food is unwholesome even if it contains no poison. To maintain the wholesomeness of this food, a strict limit is absolutely necessary, admitting for a moment, as I could not admit in the result of the investigations that I have made, that any specific poison, in the sense of a real poison, is going to develop in that food even if it is kept longer than the limit.

Now, you gentlemen have doubtless all had the same experience that I have had frequently, in having a whole meal spoiled by a single order of cold-stored products that have gone bad; that is, not poisonous, but bad tasting, unpalatable, and unattractive; and that is especially true at the beginning of a season of what I call seasonable goods. There are certain kinds of products that have seasons. Now, chicken is not one of them. You can have chicken all the year round. I will tell you one of them: That is shad. I don't believe that cold-stored shad ought to be allowed to be sold after the season for that shad has passed. I have had, right here in this town, a number of experiences in the beginning of the season, when the shad come from the southern waters, and then they are taken to cold storage—shad left over from the last of the season, and sold to our people of this city and other cities as shad from the south—uneatable to my taste, though not poisonous; but their taste and flavor are of such quality that to serve me a dish like that spoils the

rest of the dinner. The same is true with chickens. I have eaten chickens, or tried to eat them, which probably are nutritious—certainly not poisonous—but which are of a degree which not only makes them unpalatable of themselves but they throw a pall over the whole meal. A law like this, or some similar law, is going to avoid that and thus increase the consumption of cold-stored goods, because people will have confidence that they are not getting anything that could possibly be objectionable in this way.

Senator SMITH. Right at that point, have you any suggestion to make with reference to this bill?

Doctor WILEY. I would not like to suggest anything.

Senator SMITH. I mean in reference to one point, if you will hear me. It is this: How would the consumer protect himself against evasions of the law when the owner of the cold storage claimed that it had not been in there a year? You see this bill just says it shall not be in there longer than twelve months and shall be deemed an adulterated or poisonous product after the limitation of that time.

Doctor WILEY. Section 2 covers that, Senator. That it shall bear the date of when it is put in?

Senator SMITH. Yes; I noticed that, but what I wanted to do was—you know the tricks of trade—labels are very easily transferred.

Doctor WILEY. Yes, I kno that; unfortunately, that is true.

Senator SMITH. That is the point I was getting at. How will you avoid that?

Doctor WILEY. I don't believe any reputable cold storage company would evade the law. They are not lawbreakers, they are law obeyers. They would be glad of a law which would guide them, where they could stand firmly and not be subject to competition of goods of a different character.

The CHAIRMAN. I will say, Doctor, that there are two amendments proposed to this bill: One of them for inspection at the time it is placed in cold storage and the other for inspection at the recurring periods, representing the limit in this bill, so that you would be enabled to preclude unhealthy articles being placed in cold storage, and then at the recurring periods you would be able to inspect all of these.

Senator SMITH. I don't think that there has been inaugurated any system that is more beneficial and far-reaching for the benefit of all classes, the consumer as well as the producer, than cold storage, if we can perfect any plan not only to invite the confidence but to justify the confidence of the consuming public in the use of the cold storage. It will go very largely toward settling many of our very vexed problems along this line of food.

Doctor WILEY. Just my idea, that I tried to present in language—that it will prove and has proved one of the greatest blessings to humanity; will prove, with proper safeguards, a still greater blessing in the future than it has in the past.

Now, I want to come to the other part, the necessity that these goods should go into the storage in the proper form. Now, up to the present time there has been no systematic inspection of poultry at the time, or subsequent to killing. There has been no instruction given of a systematic character in regard to the sanitary conditions of the slaughterhouse, nor as to how chickens should be picked and treated immediately after slaughtering. There has been no systematic

instruction given to separate the weak and the sickly birds from the strong and healthy and properly fattened birds—all killed together, and marketed together. That is one of the things which our bureau, under the general authority conferred upon us by the pure-food law, has been studying now for about three years. The pure-food law forbids shipments of any flesh or decomposed substance; and we have been studying the killing of chickens and the storage and treatment with the view to limiting interstate commerce in goods which we can show are filthy, putrid, or decomposed.

I might say to the committee that we already have control of cold storage under that feature of the bill, and we have secured in the United States courts a number of convictions of pure-food products, not because they have been in cold storage but because they have been filthy, putrid, or decomposed.

The CHAIRMAN. Doctor Wiley, it was always my intention that the pure-food bill should cover cold storage, and I have never doubted that under a proper interpretation it did cover cold-storage products, and they are authorized under its provisions to deal with them in the way of inspection as well as any other article.

Doctor WILEY. And we have done so, but a bill like this would help us wonderfully and give us a control that is more rigid. We have got to prove that a thing is filthy, putrid, or decomposed before we can proceed against it. If the Congress shall pass a law that you can not keep goods long enough to get into the danger of being filthy, putrid, or decomposed——

The CHAIRMAN. This will be an effective bill, and we hope to make it so comprehensive that you will be able to have access to any food product, whether it is in cold storage or elsewhere and inspect it as a basis for your proof.

Doctor WILEY. You will be interested also to know that we have secured convictions for selling goods that were perfectly wholesome as if they were fresh; they were sold improperly. We didn't bring any charge against the goods as being filthy, putrid, or decomposed. They were sold as fresh. The courts have said, "Yes, that is an offense against the pure-food law."

The CHAIRMAN. Has any case come to your knowledge where they treated the fowls, chickens, and other products after they came out of cold storage to give them the appearance of freshly killed fowls?

Doctor WILEY. Not to my personal knowledge, but my inspectors have had knowledge of such practices. A cold-stored chicken after six months or nine months or twelve months becomes very much wrinkled; it loses weight in cold storage; and they have a method—I don't know how it is done—of thawing and treating those which makes them plump again; to a certain extent it removes that mark.

Senator SMITH. What is the effect of cold storage on eggs? I would like to hear that. I have got to go to another committee. I would be glad to stay and hear this hearing if I could.

Doctor WILEY. I think everything I have said about the chicken can be applied to the egg; everything both as to time and as to changes. The egg is more likely to be unfit for storage than the chicken—far more likely to be unfit for storage than the chicken at the time it enters storage, because eggs are bought from the producers now—and the testimony was given before the other committee—absolutely in bulk. Any bunch of eggs, if the producer comes

into the store, will be bought without examination at all, whether they are good or bad. The man takes the chances on them. He sells them to the man who goes and gathers them up. They are often put into cold storage without inspection. They are nearly always inspected when they are taken out, to divide into fresh eggs, strictly fresh, and fresh-laid eggs; but they are not inspected when they go in.

The CHAIRMAN. They are eggs?

Doctor WILEY. Yes, they are just eggs, nothing but eggs.

This information, Mr. Chairman, which our inspectors have secured and which has been called to the attention of the other committee, without a law, has worked a wonderful improvement in the method of handling chickens to-day. Now, a chicken has got to be properly killed; it has got to be fit to kill, in the first place, free of disease, and fat, and then properly killed; that is, what they call precooled; its bodily heat has got to be distributed before it goes into cold storage. It is a strange thing—I can't explain it now—if you take a chicken after it is killed and put it immediately into cold storage it becomes unfit for consumption after a very short time. It must be precooled to lose its natural heat. And then, of course, even if it is precooled, it has got to be dry picked. Now, the scalding of chickens tends very much to make them decay more rapidly. They must be dry picked if you want them to keep. That we demonstrated beyond a doubt.

Senator FRAZIER. What do you mean by dry picked?

Doctor WILEY. Did you ever see a chicken dipped in hot water to make the feathers come out more easily?

Senator FRAZIER. How do you get the feathers out without soaking?

Doctor WILEY. By main force. That is the way they are nearly all picked now; they just pull them off. That is a very strange thing; the chicken's skin is its protection; if you scald it you destroy nature's covering; it becomes infected thereafter much more rapidly than it does without having the skin scalded. And then, after it is killed, if you are going to ship it before it is frozen, it must be put into properly cooled cars. We put our inspectors right on them as they came from Kansas to New York, followed them up every day experimentally, and we have shown that we can deliver chickens in perfect condition from any remote point to a cold-storage house in the East here, if you want to store them here first, and have them put up in absolutely better condition. Those chickens keep very much better and taste very much better.

The CHAIRMAN. But there is another period of danger; that is, between the killing and the placing in cold cars?

Doctor WILEY. Yes; as I say, the precooling. As soon as that is done they must go at once into the low temperature if it is summer time, and most chickens are killed in warm weather, and this must be done promptly.

The CHAIRMAN. The inspection—that is, the beginning—when must that take place? When they go into cold storage?

Doctor WILEY. It ought to begin with the chickens, to see that they are fit to kill.

The CHAIRMAN. Where farmers living in the country are killing chickens that is not practicable?

Doctor WILEY. That is hardly ever done for cold storage purposes. Chickens are brought to the centers. It would not take very extensive inspection to control all the great centers. The farmer does not kill chickens for cold storage. He sells the chickens to the grocer, and he sells them to the man who eats them, and he ships them to near-by points.

The CHAIRMAN. Is it not often the case that what they call the tail end of the market is bought up by the agents of the cold-storage plants?

Doctor WILEY. It is sometimes.

The CHAIRMAN. That is an element of danger?

Doctor WILEY. Yes.

The CHAIRMAN. After the merchant has, well, all that his customer will take up, he probably calls up the representative of the cold-storage plant and says, "I have 40 chickens left over; send up and get them or I will send them down to you."

Doctor WILEY. Yes. At any rate, under the present condition of affairs the condition of storage is one of voluntary agreement between the parties. There is no law or general principle of sanitary regulation, as far as I know, that is invoked, and we might expect just this condition of affairs from that situation with any set of men. There is no imputation upon the men. It is just a natural condition that has grown up, and it needs correction.

The CHAIRMAN. Diverting for the present from the further consideration of fowl and eggs, because there is some literature that you want to bring in, as the result of your investigations can you tell us anything of the quantity of any commodity in cold storage, either approximately or specifically?

Doctor WILEY. We haven't investigated that at all, Senator. It is a matter we haven't considered within our scope, so I couldn't tell you anything about that.

The CHAIRMAN. Have you any men connected with your department who have either partial or general information on that subject?

Doctor WILEY. Yes; I have two men who are engaged in this inspection now and have been for several months, one of them about a year. They have simply taken the quantities of the various warehouses at which they have visited to see how much its capacity has been; not made any calculation at all to try to make any general amount in storage, because we are not studying that point.

The CHAIRMAN. The committee will be glad if you will give such attention as you can to that matter through your corps of competent men, and at a subsequent time give us the benefit of that knowledge. We, among other things, are directed to inquire into the question as to the quantity in cold storage of various commodities, and inquire as to the length of time that it remains in cold storage, and such information as to its character, both when it comes in and when it goes out. Now, you can proceed.

Doctor WILEY. I can say that I could get some fragmentary information on that subject from our own people, and possibly from other departments, the Bureau of Statistics or the Bureau of Animal Industry. They may have just what you want in regard to the amounts.

To sum up, Mr. Chairman—and I do not think I need take the attention of the committee any longer—I believe that with such control as a bill like this or some similar bill would secure, and with

the enthusiastic collaboration of the men engaged in the industry, of which we are assured—they are collaborating with us now with zeal and with intelligence—I believe we could give to the people of this country cold-stored fowls, say, not to exceed nine months or a year at most, which would be in a condition wholly free from any objection in regard to wholesomeness, wholly free from any danger of ptomaine poisoning, and with the palatability so little destroyed that it would be practically as good, I might say—I won't say just as good, but practically as good—as the fresh article. And what is true of the chicken is true of the egg and of fish and of game and of other matters which are subject to cold storage, such as butter.

The CHAIRMAN. I would like to ask you there, Doctor, I notice in recent years that roasts of beef are never served with the outside fat on them, or very seldom served with the outside fat on them. If you inquire about that, you will probably get the reply that I received not very far from where I sit, that it was rancid. Now, is that the process of decomposition in the cold storage commencing on the outside first; does that affect the inside of the meat?

Doctor WILEY. It would not at the first; no. It would penetrate more or less rapidly. I might say that the first chemical process we noticed is the setting off of the particles, and the setting free of the free acid is one of the first chemical changes which takes place. The next one we notice is the production of ammonia; that is, the reduction of the nitrogenous bodies to the lowest, practically the lowest state of decomposition, free nitrogen being the last one.

The CHAIRMAN. That fat, when it first assumes that condition in a progressive form seems to assume—at least, it is so stated—a greenish yellow tinge. Is that common to the outside fat of meats after the meats have been in cold storage?

Doctor WILEY. Senator, I have never myself, nor has any of my people, investigated the meat storage. That we considered strictly under the supervision of the Bureau of Animal Industry, but I have seen meats in cold storage with what are called whiskers on it; that is, a kind of white mold that grows. I would not consider that, however, a mark of deterioration as such, because the same takes place in the ripening of cheese.

Senator SMITH. And the same takes place in the preserved meats that are cured outside of cold storage?

Doctor WILEY. Yes.

The CHAIRMAN. Still, meat would be presumably in better condition, that is, fresh meats, without the whiskers?

Doctor WILEY. I am not sure as to that. The general opinion of the connoisseur is that meat is better after it is kept for some time.

Senator SMITH. That is eminently true of game?

Doctor WILEY. Yes, it is. I do not think anyone wants it frozen for ripening purposes. It is kept cold for a short time, and it improves in flavor, and probably to that extent in palatability.

I want to say a word about the influence of palatability on the wholesomeness of food. I do not think there is any doubt by hygienists and physiologists that the sense of taste is not wholly for man's pleasure; it has a direct relation to wholesomeness. Things that are wholesome as a rule taste good, and things that usually are wholesome, when they become unwholesome taste bad; that with the nose, which is part of the taste, and with the palate all animals discriminate

in their food. You will see that in all animals they will discriminate at once by the smell and the taste. It is undoubtedly true that the odor which we like, which is pleasant to us in food, and the taste which is pleasant to us in food, are the chief excitants of those glands which secrete the digestive enzymes, those bodies which cause digestion, like peptone—peptone is one of them—which in the stomach digests the nitrogenous fats; and pancreatin and etripsum, and the active ferment of the saliva—you know how the mouth waters when a good dinner comes to the sense of smell. What does that mean? It means the salivary glands are excited, they have a digestive ferment. At the same time the salivary glands of the stomach are excited. That has been proved by actual demonstration, when a dog's stomach has been taken out and a section of it separated, except so far as the stomach part is concerned, from the rest, and then sewed up and made a little stomach of itself on the outside, where it could be observed. When the dog is hungry, and that class of food is brought to him he smells it and tastes it. The salivary glands on the little stomach on the outside are very active and filled up with peptone; the same on the inside. If the dog is fed through a tube with the same substance, not allowed to smell it or taste it, practically no activity takes place in the stomach on the outside. That is why forced feeding, feeding through a tube, nearly always causes indigestion.

Senator FRAZIER. You would reason from that that the things that taste good and smell good to us are wholesome?

Doctor WILEY. Yes; they are the indices of wholesomeness to that particular animal—the wholesomeness of the product, and there isn't anything that impairs the taste of your food but impairs your digestion just to that extent. Everyone of you know—you have had experience where some bad tasting thing has upset you altogether.

Senator SMITH. Spoiling the whole meal?

Doctor WILEY. Yes; one bad smell will do it, one bad taste, one bad oyster; you put your dish aside; you don't want any more oysters, not very much of anything else in that meal. It has such an intimate relation to digestive process, I maintain that any method of treating food which impairs the taste, its flavor, and its odor is deleterious to health, irrespective of the presence of any product which in itself is poisonous.

The CHAIRMAN. About the question of deception practiced upon the purchaser by selling cold-storage food for fresh food, you say you have investigated that and learned that it is done?

Doctor WILEY. Yes. We have had convictions in the United States courts on that point.

The CHAIRMAN. Can you refer us to that case?

Doctor WILEY. I can give you to-day the notices of judgment that have been printed. I will file those with the committee—all cases of that kind. I will file with you a dozen or more cases of convictions, so that you can see what has been done under the law at present.

The CHAIRMAN. I have to apologize to the Doctor for putting him on without notifying him that he was to go on this morning. I have another witness to call, so that we will take occasion to ask you——

Senator FRAZIER. I was not in when you started this. I believe you stated that nine months is the limit of safety with respect to the food in cold storage?

Doctor WILEY. No; I didn't say that nine months was the limit of safety. It is the limit of confidence.

Senator FRAZIER. How do you arrive at that definite period?

Doctor WILEY. I arrive at it by a study of the progressive changes in certain goods; that at nine months a chicken becomes distinctly less palatable than it was at the beginning. I don't think there is anything poisonous—that is to say, injurious to health—but just to that extent that it is less palatable; also it is as long, under ordinary conditions, as anything ought to stay in cold storage without interfering with the next crop.

Senator FRAZIER. For those two reasons——

Doctor WILEY. For those two reasons; and for the third reason that when the people of this country know that they are not going to get cold-storage foods over 9 months of age they will have greater confidence, and it will be of benefit to all parties—the producer, warehouseman, and consumer—all parties connected with it.

Senator FRAZIER. Does that apply to all cases of food kept in cold storage; meats and anything of that kind?

Doctor WILEY. I don't think meats ought to be kept as long as that. I should say four weeks is about as long as meat ought to be kept, from my imperfect knowledge of the industry.

The CHAIRMAN. You will have more definite knowledge later?

Doctor WILEY. Yes. I am speaking now only of chickens and eggs and such things. Nine months is as long as the exigencies of the trade demand and as long as the palatability permits, so for those three reasons I am in favor of a little less time than this bill, but this would be an excellent measure, as far as time is concerned, just as it is. I think it would be a better bill to make it a little bit less. That is the recommendation I made to the other committee.

Senator FRAZIER. Is it not true that there is more probability of ptomaine poisoning existing in nine months than there is at the beginning?

Doctor WILEY. I think, Senator, so long as an article is frozen there is scarcely any danger of ptomaine poisoning, even for a longer period. After it is thawed out there is great danger of any product developing ptomaine or poisonous substances very rapidly, but not while it is in cold storage.

Senator FRAZIER. That statement would apply to the provisions in cold storage for three months as well as provisions in cold storage for nine months?

Doctor WILEY. Our experience is that you can not detect any change in flavor in three months, and you are not certain to be able to do it in six months, but in nine months it is very plain that some deterioration has taken place.

Senator FRAZIER. I am talking about the deterioration after it is taken from the cold-storage house.

Doctor WILEY. I think that would take place in any cold-storage goods no matter how short a time they are kept. The mere act of freezing does increase the tissues.

The CHAIRMAN. I think before you came in the Doctor stated more at length that any chickens or goods that had been subjected to cold storage, after they are thawed out, causes the progress of disintegration as quickly after a short period as after a long period.

That is the real danger point. He said that in his judgment they should be sold while yet frozen and exposed to sale while yet frozen.

Senator FRAZIER. I will not ask the Doctor to repeat that. I will read his testimony.

STATEMENT OF PIERRE P. GARVAN, PROSECUTOR OF THE PLEAS, HUDSON COUNTY, N. J.

The CHAIRMAN. Mr. Garvan, the prosecutor in Jersey City.

Mr. GARVAN. Would you mind asking Doctor Wiley whether, in his experience with cold storage, poultry increased in weight where water was used in thawing? If so, to what per cent?

Doctor WILEY. I haven't made any experiments to show how much it increases in weight, whether it does or not. I said that cold-storage chicken had a somewhat shrivelled appearance after it was kept for some time. I was informed that the process of thawing removed that condition.

The CHAIRMAN. You could probably obtain some definite information for us on that subject?

Doctor WILEY. I think I can; yes.

The CHAIRMAN. Now, Mr. Garvan.

Mr. GARVAN. Right on that very point, Mr. Chairman, I might begin.

The CHAIRMAN. First, you may tell us, as a basis for your testimony, your experience and position, so that it will be in the record here.

Mr. GARVAN. Why, five or six months ago an investigation was started in Hudson County before the Hudson County Grand Jury in reference to cold storage methods in that country.

Senator FRAZIER. New Jersey?

Mr. GARVAN. Yes; and we went into that condition very thoroughly so far as it relates to cold-storage methods in that county. Of course we had no authority to go outside of that jurisdiction, nor am I at this time, of course, permitted to recall what took place before the grand jury. That investigation, outside of what transpired before the grand jury, indicated to me quite clearly what has already been spoken of by Doctor Wiley; and we found that as there is no law regulating the cold storage—properly regulating cold storage, I will say—that it was possible to retain meats, chickens, and poultry and other products in those plants an indefinite period; and I have information which shows that poultry has been kept in cold storage for a period much beyond a year.

The CHAIRMAN. How much?

Mr. GARVAN. In one instance, two years, and a number of instances fifteen months. Meats have been kept there—when I say meats I refer to fresh beef and meats of like character—have been kept there at least eight months and possibly longer. I didn't go back of that on meats. And eggs have been kept there for a period of a year or more, thirteen or fourteen months I think was the longest time. We found turkeys, or rather the board of health of Jersey City, found turkeys in cold storage that were black and were condemned at once. The excuse given was that that particular shipment had probably been forgotten by the shipper or owner. The board of health of Jersey City was called on several times to take goods from

cold-storage plants because they had decayed, and they took those goods and I think carted them to the dumps, or in one instance they sold them to some factory concern for certain uses. I don't know what that was for.

The CHAIRMAN. I would like to know, if you can give us any information, for what purpose they were used or in what manner?

Mr. GARVAN. Why, I requested the board of health of Jersey City to find out for what purpose. I could furnish you the names—the name of the party who purchased the goods..

The CHAIRMAN. I would be glad to have you do so.

Mr. GARVAN. I haven't it here, Senator. I will send it to you. I understand that man makes a business of some kind out of bad eggs. We found that there is what is called canned eggs in certain cold storage plants—none in the public—but these are in the private. I refer to Swift's plant in Jersey City, where they claim to have a small quantity of three or four hundred cans of eggs. It is claimed that eggs are candled before they are sent out on the markets. As Doctor Wiley says, they are rated as firsts, seconds—I don't believe there are any bads. I didn't discover any in my investigation. It seems that cracked eggs are considered good eggs, and are canned.

The CHAIRMAN.. Do you know anything of the condition of those eggs when they are canned?

Mr. GARVAN. All I know is that, according to the testimony—according to statements that I have—I can verify that the goods are taken from the boxes where they are found to be cracked; they are simply broken into a can; the eggs are candled, firsts and seconds; and it is not necessary for me to say to this committee that you can not go into any retail store and purchase seconds, for in all instances they are fresh eggs. We discovered a number of instances of that character. For instance, in a certain plant—and this is not a public plant, by the way—and I think the bill ought to go further and cover all cold-storage plants, if it doesn't already. If the bill merely applies to public cold-storage houses, you are not striking at Swift's and Armour's and other large packers who have cold-storage plants connected with their concerns. We found in one private plant something which I could not describe to you except by saying that it appeared to me to be a very black stone, and I found them in layers, flat, probably 15 or 18 inches long—maybe not quite so long as that—placed up on top of each other, higher than my head and extended all about a room, probably as large as this.

The CHAIRMAN. In cases?

Mr. GARVAN. Not in cases, simply piled right up on top of each other—layers. Possibly, I should say there were 400 of them there. They were as hard as this wood [indicating the table], and when I inquired what they were they told me it was beef liver, and that it is brought to life, or revivified, by soaking in water, and we know—we judge from that that is our fresh liver. I couldn't tell you how many pounds were there. I should say there were about 400 pieces, and each piece certainly weighed 10 pounds. That was one of the reasons which led me to investigate cold-storage conditions; for I considered if they could take——

The CHAIRMAN. Is this in connection with the egg part of it?

Mr. GARVAN. This is in connection with the cold-storage investigation.

The CHAIRMAN. This was really liver, was it?

Mr. GARVAN. That was really liver, and that liver had been there from some time in October until the middle of February. It may be there to-day. There were a number of instances of that character which led me to believe that there should be some sort of a regulation of cold-storage plants. We found hundreds of carcasses of beef and sheep laying about these cold-storage plants, frozen, of course; and in that one little county we found that there were at least about 2,000,000 pounds of beef, about a million pounds of poultry, and about 190,000,000 eggs stored there within a few months.

The CHAIRMAN. What condition did you find them in?

Mr. GARVAN. What condition did we find them in?

The CHAIRMAN. In what condition were these products? Were they well preserved and healthy?

Mr. GARVAN. Well, as I stated before, we found turkeys there, and chickens, too, by the way, which were not in good condition. The turkeys were black and decayed. As I said before, the excuse was that they had probably been forgotten.

The CHAIRMAN. Do you know whether any of those had been sent out on the market?

Mr. GARVAN. No. I inquired, but I couldn't find that out. We would not advocate a cold-storage bill to get after people who would do a thing of that character. We have sufficient law on that point.

Senator FRAZIER. Have you any statute in New Jersey regulating cold storage?

Mr. GARVAN. No. Unfortunately a bill passed the house of assembly by practically a unanimous vote, but during its transmission from the assembly to the senate the bill disappeared suddenly.

Senator FRAZIER. Disappeared?

Mr. GARVAN. It is in cold storage, undoubtedly, somewhere. In taking this matter up with the cold-storage people, who have seemed very fair and willing to give the figures, I have gotten their figures and I know what they have in their plants.

The CHAIRMAN. Could you at another time give us those figures, or have you them now?

Mr. GARVAN. No; I haven't got all of them. I have as to the quantity of eggs that were there and can give it to you now: 194,000,000 eggs; those are the round figures; 194,000,000 eggs stored there between the 1st day of April last year and the 1st day of February this year. As you know, the period of placing eggs in cold storage is during the months of April and May of each year. That is the time when eggs are gathered together and placed in cold storage. Of course, some are placed there in other times of the year, but it is claimed by the cold-storage people that the summer months are not proper months to gather eggs and place them in cold storage. The fall of the year is the time when poultry is stored away; the twelve months of the year is the time when meats are stored away. I have given in round figures the amount of meat and also of poultry that we found in cold storage in that county between the 1st of April and the 1st of February of this year. If you want more accurate figures I shall be pleased to give them. Those are the round figures.

The CHAIRMAN. The round figures are sufficient.

Mr. GARVAN. From the investigation that we made, I recommend, as Doctor Wiley has recommended, that there should be an inspection of poultry; and I know of no reason why there should not be an inspection of meat. I think I am not mistaken, Doctor, when I say that there is no inspection of meats which go in cold storage. These smaller slaughterhouses have no federal inspection at all, I am told, according to the reports of one of your departments here; and it is only in the large packing houses where there are federal inspectors; so meats come from anybody and everybody; and actually these products are placed in cold storage regardless of their condition.

The CHAIRMAN. Is the left-over meat in the market placed in cold storage?

Mr. GARVIN. That I couldn't say, but the figures indicate this very clearly, that vast quantities of poultry are placed in cold storage in the months of January and February, and particularly the month of January, which indicates to me that the holiday trade, not taking, not consuming the vast quantities which are placed in the markets, they are afterwards placed in the cold storage. The figures show that the largest quantity of poultry which is placed in cold storage in any one month is in the month of January. Of course, I am speaking of Hudson County. I don't know how it may apply to other places. Of course, there are large quantities placed there in October, some in September. Then it begins to go out in November and December. Strange to say, in the month of January vast quantities of poultry are then placed in cold storage, and we can only judge it is because of a failing of the market during the holiday time. And we find, too, from investigation that products of that character taken out of cold storage and placed upon the market and afterwards put back are very, very detrimental to health.

The CHAIRMAN. Your presumption is that much of the holiday stock is taken out of cold storage; has been in cold storage?

Mr. GARVAN. Has been in cold storage; yes.

The CHAIRMAN. Is it thawed out when it is offered for sale during the holiday times?

Mr. GARVAN. Placed right in the open, as we found it.

The CHAIRMAN. And then returned to the cold storage?

Mr. GARVAN. Yes; returned to cold storage.

The CHAIRMAN. Do the cold-storage plants in your county draw their supplies from beyond your county?

Mr. GARVAN. They draw them from all over the country. We find, for instance, that eggs are largely stored away by commission merchants; and I can only say this, that the commission merchants in that vicinity have what they call the mercantile exchange, and whether or not they fix prices I think can be determined if this committee has the authority to subpœna the officers; or, possibly, District Attorney Whitman, of New York, can furnish you information in that respect.

The CHAIRMAN. Can you give us a little more definite information in regard to the different meats that you found in cold storage—as to their being preserved or partially preserved, or their condition of deterioration?

Mr. GARVAN. We did not investigate in that particular line to determine whether or not the meats were in good condition. We simply investigated along the line of the quantity that was there.

The CHAIRMAN. Now, have you some tables with reference to the cold storage?

Mr. GARVAN. Yes; I have.

The CHAIRMAN. Mr. Smith, I think, has them.

Mr. GARVAN. I have one table, for instance, prices paid, or prices of eggs, and the quantity in the New York market during the years 1896, 1900, 1905, 1906, 1907, 1908, 1909, showing the average prices for the months of those, and by years. And it would be quite interesting for this committee.

The CHAIRMAN. We had that table, did we not?

Mr. SMITH. No; it has not been here.

The CHAIRMAN. Well, it is near the adjournment time. Before the next hearing——

Mr. GARVAN. I have it here now.

The CHAIRMAN. You have it?

Mr. GARVAN. Yes.

(Submits the following tables:)

Eggs.

1909.

[Receipts for year, 4,256,320 cases; average for year fresh gathered firsts, 25.03 cents.]

	Amount.	Western finest.	Fresh firsts.	Ref. best.
		Cents.	*Cents.*	*Cents.*
March	516,141	.....	18½–22½	.....
April	636,423	21½–25½	20 –22½	.....
May	603,583	21½–23½	20½–22½	.....
June	519,330	21½–23½	20½–22	.....
October	248,143	25½–30	24½–27½	24 –26
November	177,330	30 –37	26½–34	24 –25½
December	167,929	31 –38	28 –35	22½–26½

1908.

[Receipts, 4,116,269; average, 22.19 cents.]

March	521,645	.....	15 –23	.....
April	630,688	15½–17½	14½–17	.....
May	603,671	16½–18½	15½–17½	.....
June	477,161	17 –19	15½–17½	.....
October	212,477	24 –30	21 –28	22–23½
November	139,712	.....	27 –36	23–26½
December	146,717	.....	30 –40	26–27½

1907.

[Receipts, 4,426,614; average, 22.95 cents.]

March	633,093	.....	16½–27	.....
April	749,666	17–18½	16 –18	.....
May	672,747	17–18½	16 –18	.....
June	492,501	16–17½	15½–16½	.....
October	235,381	24–27½	21½–25	18–21½
November	154,662	27–32	25 –31	18–20
December	162,531	25–34	24½–33	18–19½

Eggs—Continued.

1906.

[Receipts, 4,086,151; average, 22 cents.]

	Amount.	Western finest.	Fresh firsts.	Ref. best.
		Cents.	*Cents.*	*Cents.*
March	391,197	.....	14½–18	.....
April	509,852	18–19	17 –19	.....
May	656,916	17–18½	16 –18	.....
June	452,565	18	16½–17	.....
October	271,088	26–27	24½–26	22–23
November	164,274	27–33	26 –32	22–23
December	137,424	.....	27 –35	23–24

1905.

[Receipts, 3,581,631; average, 22.22 cents.]

March	411,665	.....	16½–35	.....
April	584,289	.....	17½–18	.....
May	551,255	.....	17 –18	.....
June	427,136	17–17½	15½–17	.....
October	207,513	22–26	20 –25	20½–22
November	166,292	26–31	24 –30	21½–22½
December	137,209	27–30	26 –30	20 –22

1900.

[Receipts, 2,911,818; average, 17.7 cents.]

March	269,689	11½–20	.....	.....
April	390,732	11½–12½	.....	.....
May	368,564	11½–14	.....	.....
June	299,922	12½–15	.....	.....
October	196,689	20 –21	.....	16½–17
November	158,769	21 –27	.....	20 –23
December	144,855	24 –29	.....	18 –25

1896.

[Receipts, 2,594,992; average, 15½ cents.]

March	313,336	11 –11½	.....	.....
April	329,912	10½–12½	.....	.....
May	273,189	9½–12	.....	.....
June	247,274	11½–12½	.....	.....
October	174,688	17½–19	.....	15–16
November	154,395	20 –24	.....	19
December	143,544	17 –24	.....	14½–20

Senator LORIMER. May I just ask what was the ultimate purpose of your investigation? I think I might myself understand more plainly. Was it to determine the wholesomeness of the food or to determine whether or not there was a combination to raise prices?

Mr. GARVAN. As I say, the question of the wholesomeness of food, that was really our main purpose in starting the investigation. Then it afterwards developed along other lines.

Senator LORIMER. Have you any testimony from scientists as to the wholesomeness of the food that you found there?

Mr. GARVAN. Yes. Doctor Wiley considered Doctor McLaughlin a very eminent doctor. I think Doctor Wiley knows him. Doctor

McLaughlin was before our grand jury and also submitted reports to me in reference to this matter.

Senator LORIMER. Are you so situated that you can submit that testimony to this committee?

Mr. GARVAN. I can arrange to have Doctor McLaughlin here, if the committee wishes.

The CHAIRMAN. Yes; we should like to have him here.

Mr. ROBERT M. REED. Mr. Chairman, would it be proper, in the interests of the warehousemen, to ask Mr. Garvan one question?

The CHAIRMAN. Yes; when he has finished his statement. Yes; we are after information.

Mr. REED. I would like to know the proportion of food that they found bad. He has given the portion in the warehouse. I understand that there were but four or five turkeys found.

The CHAIRMAN. We will allow the testimony to go in in regular order.

Mr. REED. Yes, sir.

Senator FRAZIER. Mr. Chairman, do you want to adjourn now for the meeting of Congress?

The CHAIRMAN. Yes; it is 10 minutes of 12. We will put the statement in.

Mr. GARVAN. If the committee is through with me, I would like to go back on that 1 o'clock train, if I can.

The CHAIRMAN. Yes, we are through for the day. Is that the statement you have referred to?

Mr. GARVAN. Yes.

The CHAIRMAN. Who made that statement? Under whose direction, rather?

Mr. GARVAN. That was prepared by one of the cold-storage people.

Senator FRAZIER. At your request?

Mr. GARVAN. No; they volunteered the information.

The CHAIRMAN. Well, we will let that be marked in evidence in connection with Mr. Garvan's testimony.

Now, Senator, when would you think we could meet again? Shall we meet to-morrow at 10 o'clock?

Senator FRAZIER. I have a committee at 10.30 to-morrow, but still you can go on with the examination. It will probably end during the day.

The CHAIRMAN. We will take a recess until 10 o'clock to-morrow and continue the taking of testimony——

Senator LORIMER. Senator, I suggest that these hearings be printed each day, that we may have the testimony.

The CHAIRMAN. Yes; we will have them printed each day.

Then, the committee will stand adjourned until 10 o'clock to-morrow.

(The committee thereupon, at 12 meridian, adjourned to Tuesday, April 26, at 10 o'clock a. m.)

TUESDAY, APRIL 26, 1910.

WASHINGTON, D. C.,
Tuesday, April 26, 1910—10.30 a. m.

The committee met pursuant to adjournment.

Present: Senators Heyburn (chairman), Lorimer, Oliver, and Smith.

The CHAIRMAN. The committee has considered the order of receiving such statements and testimony as we may feel called upon to take in this matter, and have determined that during this week, as soon as the scientific men are disengaged, who are now engaged in another hearing, we will conclude the testimony to be taken in Washington so far as the scientific side of this question is concerned. Then on next Monday at 10 o'clock we will commence a further hearing of the statements of those who may be termed the probers of the cold-storage question, as along the line of yesterday's testimony. Then on Thursday morning of next week, at 10 o'clock, we will hear those that we might possibly denominate the warehouse men, the cold-storage men, who desire to be heard in opposition to this legislation.

After that order of procedure we will then hear any parties on either side, or between the lines, or beyond them. We think it best to hear what might be termed the affirmative side of this matter first, those favoring the enactment of the law, and laying the foundation for all of the testimony of both kinds in the nature of scientific testimony this week.

If you desire to be present during the taking of the scientific testimony in regard to the effect of cold storage and its relations to this proposed legislation, why you can be present, of course. It will be an open session, and the testimony will be reported each day and transcribed and will be available. Of course either side can be present while the other is being investigated.

Now, unless there is some one here in favor of this bill—that is, who desires to give testimony in favor of this bill, who desires to be heard to-day, why, the committee will take a recess until such time as Doctor Wiley notifies us that his men are in town. That is the sense of the committee. Now, is there any gentleman that desires to be heard to-day?

Mr. GOOD (Representative from Iowa). There are some gentlemen here from Iowa who would like to be heard. They are not in favor of the bill; they are in opposition to it, but it is doubtful if they could come back. They are interested in the small independent packing houses of that State, and I think they would like to be heard.

The CHAIRMAN. All right, we will hear you. Just come forward and give your names and the businesses you represent.

STATEMENT OF MR. JOHN H. MORRELL, OF OTTUMWA, IOWA.

The CHAIRMAN. Mr. Morrell, where do you reside?

Mr. MORRELL. Ottumwa, Iowa.

The CHAIRMAN. What is your business?

Mr. MORRELL. Pork and beef packing.

The CHAIRMAN. At what point?

Mr. MORRELL. Ottumwa, Iowa, and branches in Chicago and elsewhere.

The CHAIRMAN. Are you a member of a firm, or do you represent a corporation, or are you acting on your own account?

Mr. MORRELL. I am a member of the firm of John Morrell & Co.

The CHAIRMAN. How long have you been engaged in the packing business?

Mr. MORRELL. Upward of thirty years; our firm has, sir.

The CHAIRMAN. What do you pack?

Mr. MORRELL. Pork and beef products.

The CHAIRMAN. What is the capacity of your plant?

Mr. MORRELL. Why, we have a maximum capacity of 5,000 hogs per day, but that is more than we would kill every day; an average capacity of, say, 3,500 hogs per day.

The CHAIRMAN. Do you pack up to your capacity, as a rule?

Mr. MORRELL. We do, sir, when the supply of live stock will warrant it, which has not been the case for the last year or two.

The CHAIRMAN. How much have you been packing during that last year or two?

Mr. MORRELL. We are running in the neighborhood of 550,000 to 600,000 hogs per year.

The CHAIRMAN. About what weight do they represent?

Mr. MORRELL. Our average weight will run from 210 to 220 pounds per hog?

The CHAIRMAN. Do you pack any by-products of the hogs?

Mr. MORRELL. Yes, sir.

The CHAIRMAN. What itemized products do you pack from the hog?

Mr. MORRELL. You mean by-products?

The CHAIRMAN. I mean the hams and sides, etc.

Mr. MORRELL. We make hams and breakfast bacon.

The CHAIRMAN. Can you give the quantities approximately?

Mr. MORRELL. No, sir; I could not except the number of hams from each hog.

The CHAIRMAN. You have no estimate on the lot?

Mr. MORRELL. No, sir.

The CHAIRMAN. Well, what other by-products do you make?

Mr. MORRELL. We make sausages, canned meat.

The CHAIRMAN. All the hog products?

Mr. MORRELL. Yes, sir; all the hog product and canned meat products.

The CHAIRMAN. What canned hog products do you make?

Mr. MORRELL. We have canned tongue, potted ham, sausages—some sausages put up in cans. I believe that would generally cover the situation.

The CHAIRMAN. Now, do you pack anything but hogs?

Mr. MORRELL. Yes, sir; we kill beef.

The CHAIRMAN. Beef?

Mr. MORRELL. Yes, sir.

The CHAIRMAN. How much beef do you pack?

Mr. MORRELL. Not very many; probably 200 per week.

The CHAIRMAN. Two hundred per week?

Mr. MORRELL. Yes, sir.

The CHAIRMAN. Now, what by-products do you make from the beef?

Mr. MORRELL. Well, not many. We have the ox tongue, and some of the beef material is used in making up sausage, a combination of beef and pork. We sell our oleo.

The CHAIRMAN. What amount of oleo do you make?

Mr. MORRELL. I couldn't give an estimate except based on the number of cattle that we kill.

The CHAIRMAN. Well, give me that basis.

Mr. MORRELL. Well, probably I should say it would run—probably 8 to 10 pounds per animal.

The CHAIRMAN. Now, what other products, meat products, do you handle except hogs and cattle?

Mr. MORRELL. No other meat product, sir.

The CHAIRMAN. What else do you handle?

Mr. MORRELL. We can tomatoes.

The CHAIRMAN. What quantity?

Mr. MORRELL. Well, sir, that varies very materially according to the supply.

The CHAIRMAN. I want to ask you in this connection: What per cent of the hogs and cattle that you slaughter goes into cold storage?

Mr. MORRELL. That is a rather difficult question to answer, unless I knew just what was intended by cold storage in this bill.

The CHAIRMAN. Well, leave the bill out of it and tell us what goes into cold storage from your standpoint and then we will inquire as to that afterwards.

Mr. MORRELL. You mean what I understand by cold storage? Well, sir, the percentage is so small from our standpoint that it would be difficult for me to answer that question.

The CHAIRMAN. Where is your market for the products that you produce?

Mr. MORRELL. Throughout this country and in Great Britain.

The CHAIRMAN. What do you do with it when you kill it? Take, for instance, the hogs, first?

Mr. MORRELL. We put them into the chill room.

The CHAIRMAN. How long do they stay there?

Mr. MORRELL. From forty-eight to seventy-two hours.

The CHAIRMAN. What do you do with them next?

Mr. MORRELL. Take them out of the chill room and cut them up into various parts—hams, shoulders, bellies, picnics, butts, etc.

Senator OLIVER. What is the picnic?

Mr. MORRELL. The picnic is the fore part of the shoulder, used to be called a "picnic ham," or California ham.

The CHAIRMAN. What do you do with that meat when you divide it up in that way?

Mr. MORRELL. We cure the hams, shoulders, bellies, and sweet pickle them. The backs at times are made into fresh pork loins, from which the trade get their pork chops, and at times they are made into what we term "English backs;" that is, a cut where the loin and the fat are left together.

The CHAIRMAN. They are salted and preserved?

Mr. MORRELL. Yes, sir.

The CHAIRMAN. Now, what percentage, if any, of these carcasses of the pigs do you retain in cold storage?

Mr. MORRELL. What percentage of the carcasses? As carcasses, not any, sir.

The CHAIRMAN. None at all?

Mr. MORRELL. No, sir.

The CHAIRMAN. And you convert your hogs entirely into the assorted and cured products?

Mr. MORRELL. That is correct, sir.

The CHAIRMAN. Now, with reference to beef, what do you do with it?

Mr. MORRELL. The beef we do the same way; we cut it up into the various parts.

The CHAIRMAN. You do not retain it in carcasses?

Mr. MORRELL. No, sir.

The CHAIRMAN. Then you are really a meat-curing establishment?

Mr. MORRELL. We are; yes, sir.

The CHAIRMAN. You are not a cold-storage establishment at all?

Mr. MORRELL. No, sir.

The CHAIRMAN. Have you cold-storage rooms?

Mr. MORRELL. We have.

The CHAIRMAN. For any other purpose than chilling the meat?

Mr. MORRELL. No, sir; just use it in connection with our own business.

The CHAIRMAN. And for the chilling of meat?

Mr. MORRELL. Yes, sir.

The CHAIRMAN. What is the longest time you hold any meat products in cold storage?

Mr. MORRELL. I should say three months.

The CHAIRMAN. That would be the beef?

Mr. MORRELL. Yes, beef; sometimes pork for a shorter time than that.

The CHAIRMAN. Do you have any chickens or turkeys?

Mr. MORRELL. No, sir; we do not.

The CHAIRMAN. You have given the capacity and the quantity?

Senator SMITH. I would just like to ask this question, Mr. Chairman. In other words, that cold-storage room, your plant, is only used for the purpose of putting raw meats in proper form for the curing?

Mr. MORRELL. That is correct, sir.

Senator SMITH. You do not store it for a period of time to sell it again as fresh meats?

Mr. MORRELL. Occasionally, we will hold pork loins, if the market is depressed, or the supply is in excess of the demand, we will hold these pork loins in cold storage, in Ottumwa, and market them as the trade requires it.

Senator SMITH. You do not just store your beef and pork indefinitely to get the market on fresh meats?

Mr. MORRELL. No, sir; not speaking of them as a whole.

The CHAIRMAN. Are there any other questions?

Senator SMITH. Did I understand him to say that he did not handle poultry at all?

Mr. MORRELL. No; I don't handle poultry or eggs or fish.

The CHAIRMAN. Upon what grounds are you opposed to the proposed legislation?

Mr. MORRELL. Because, sir, the bill as drawn would have a very serious effect on our business—that I would like to bring out, if I may be permitted. As I was starting to say, I was going to ask just what is meant by "cold storage." I will explain my question in that way. We kill, for argument sake, our hogs on Monday; they are chilled for forty-eight hours and dried on Wednesday. The work that is done late in the afternoon on Wednesday makes it impossible to load these

fresh pork loins in cars for distant destinations, so those are put into our chilled room again, say, on Wednesday night. They are then started to their eastern destination on Thursday—I am now speaking for illustration—and they will arrive, probably, on Tuesday, speaking on the average. It will take a day or so to distribute those. Our wires are kept busy, our representatives go out in the centers where we solicit trade; and it will take, as I say, a day or two to assort the orders and ship them out. In the meantime, they are put back again into what might be called cold storage. Now, my point, what I want to ask, is: In all those three occurrences that I have referred to, do they come within this bill as going into cold storage?

The CHAIRMAN. Cold storage here is limited to a certain period of time. You have not spoken of any conditions that would cover a period of even a month.

Senator LORIMER. I think, if you will read that bill closely, it provides for any period of time.

Mr. MORRELL. Yes, sir; the second section——

Senator LORIMER. You will find on the second page, the first line, that it will cover any period, if it was only a minute.

The CHAIRMAN. Then, it would seem that your objection is directed against the inspection part of it and the dating?

Mr. MORRELL. Against the dating, sir. That is the serious handicap for us.

The CHAIRMAN. If you don't hold it over a very short time, how would that handicap you?

Mr. MORRELL. We have to date all our product, and it would go out with dates on it.

The CHAIRMAN. What is the objection to doing that?

Mr. MORRELL. That would arouse the suspicion of the dealer and the consumer.

The CHAIRMAN. Why should he be suspicious of it if it does not indicate any harmful condition or deterioration?

Mr. MORRELL. No, sir; but as I would like to explain another feature of our business: They would receive meats in the same package that will bear different dates. They would say to us: "We are returning to you the older dates; we want nothing but the newest." It will be impossible for us to supply a man with meats that will bear all the same dates. I can explain that.

Senator LORIMER. Explain the effect of that on your foreign trade.

Mr. MORRELL. The effect on the foreign trade would be very serious. We are interested very largely in the export trade—have been for many years. We come in competition with shipments of hog products from Denmark, Belgium, Italy, Servia, and latterly——

The CHAIRMAN. They are subject to inspection laws now, are they not; your foreign shipments are subject to foreign inspection laws?

Mr. MORRELL. Yes, sir; but these other countries don't have to date their shipments, and if we have to do that it will be serious.

The CHAIRMAN. Would it be satisfactory to you if this bill should be amended, as in the case of the pure food bill, providing that where the country to which products are exported do not require the date, you would not be required to put it on, but that all products for sale within the United States should be dated, and within any foreign country where the date may be required?

Mr. MORRELL. No, sir; as I would like to show, there would be serious objections to our dating the products for distribution in the United States also. If I may be permitted now, gentlemen, to explain.

The CHAIRMAN. Yes, sir; go ahead and make your explanation.

Mr. MORRELL. Well, different packers have different methods; different parts of the hog require a different number of days, a different length of time for curing; for instance, a belly, having no bone in it—that is, when the ribs are removed, which is generally the case, can be cured in a short time, comparatively speaking. The ham, or the shoulder with the joints in it, require considerably longer.

The CHAIRMAN. Let me interrupt you there: Now, do you inject anything into these hams or shoulders for the purpose of curing them, or for any purpose?

Mr. MORRELL. Yes, sir; just brine.

The CHAIRMAN. You inject it into the joints, do you?

Mr. MORRELL. Yes, sir.

The CHAIRMAN. How?

Mr. MORRELL. Through a needle.

The CHAIRMAN. Do you put anything into the brine, formaldehyde or anything of that nature?

Mr. MORRELL. No, sir; that is absolutely prohibited.

The CHAIRMAN. You put nothing but salt water?

Mr. MORRELL. Yes, sir; and sugar.

The CHAIRMAN. And sugar?

Mr. MORRELL. Yes, sir; and saltpeter.

The CHAIRMAN. Now, you substitute that injection for one that was in use, at least to some extent, before the pure food law—formaldehyde and some other things?

Mr. MORRELL. We never used formaldehyde, but we did use borax and boracic acid.

The CHAIRMAN. You used the equivalent?

Mr. MORRELL. Yes, sir.

The CHAIRMAN. Now, you substitute brine for that. Do you find the brine is as effective as the acids were?

Mr. MORRELL. No, sir; we do not get as good results, but we are doing the best we can under the circumstances.

The CHAIRMAN. You inject that into the joints and into the bone, do you?

Mr. MORRELL. Into the joint; into the bone. There is no trouble in corned beef.

The CHAIRMAN. I want to test that, not to test you, but to test the truth of that thing. I procured a ham within the last few hours within the market here for investigation. The ham would seem to be several years old. It was on what we call the poor man's market, and what you call the divisions in the ham were open, had started to give way, and this ham was very rank and unfit to eat. The fat has a peculiar smell when it is being cooked. Is that the effect of the injection of borax or formaldehyde?

Mr. MORRELL. No, sir; not necessarily.

The CHAIRMAN. What would you say caused that condition; a salt, smoked ham to be decayed?

Mr. MORRELL. First, its age, and second, the temperature to which it had been exposed.

The CHAIRMAN. Not because of any of the acids or the brine?

Mr. MORRELL. No, sir; I would not think so.

The CHAIRMAN. Well, I merely wanted a little information about that ham, because it was called to my attention, knowing that these hearings were on. Well, now, you say that you preserve them by injecting this brine into the joints and into the fats?

Mr. MORRELL. You would hardly use the word "preserve," Mr. Chairman.

The CHAIRMAN. What do you do it for?

Mr. MORRELL. Just to assist in the curing; to expedite the cure. If not, the brine would all have to do its work from the outside, and we inject—we bore the needle into the joint, alongside the joint, and pump the pickle down so that the curing process can go on from the inside as well as the outside at the same time.

The CHAIRMAN. Now, I interrupted you there with that last question. Go ahead with your statement.

Mr. MORRELL. I think I stated, sir, that the light hams—or I meant to state—that the light hams can be cured in a very much shorter time than the heavy hams. We will get an order from a customer for so many 10 to 12 pound hams, and so many 18 to 20 pound hams, and so many bellies. They will be sent forward to him in one, two, or three boxes, whatever is necessary. On that same shipment he will receive, under this bill, goods bearing dates that will vary sixty days. He will immediately say to us, "I don't want these older dates; I have sent back to you everything but those bearing new dates." It will then be necessary for us to enter into correspondence with our various customers and explain to them why and how this is.

The CHAIRMAN. Well, now, look at it from the standpoint of the person who eats it rather than the person who is dealing in it merely as an article of commerce. Don't you think that the person who eats it is more interested in the date than the merchant who sells it to you?

Mr. MORRELL. Well, they would both be equally interested. I think my remarks would apply to either.

The CHAIRMAN. One would be a financial interest; the other would be a personal interest.

Mr. MORRELL. Exactly.

The CHAIRMAN. I think the purpose of the bill should be to protect the person who consumes the food rather than the person who deals in it as merchandise. Now, from that standpoint, what objection is there to dating the product?

Mr. MORRELL. That it will arouse their suspicion. When they go to a store and buy a piece of bacon that bears a date thirty days back and they get a ham that bears a date sixty days back of that, say ninety days altogether, there will be serious doubts in their minds.

The CHAIRMAN. Will those doubts be allayed by eating the product?

Mr. MORRELL. I think they would, sir.

The CHAIRMAN. Then there is no ultimate harm?

Mr. MORRELL. Well, we would be going through a very serious time until we got their confidence and got them to understand the true situation.

Senator SMITH. Is it not a fact that any preserved meats such, as you are interested in producing, that were properly cured, their age really lends to their wholesomeness and their flavor?

Mr. MORRELL. That is what I desired to come to, sir.

The CHAIRMAN. Proceed.

Mr. MORRELL. That after the meats are cured, we then put them into our own private cold store for the purpose of improving their condition and their flavor. We know from actual experience that that is the case, in the same way that wines improve with age. Now, in doing that, supposing that up to this time these various little delays that I am speaking of are not supposed to come within this bill—if we put those joints into cold store after they are cured for a period of thirty, sixty, or ninety days, if we put them in cold store within the meaning of this act, and if we have got to put a date on each piece; if so, we have got a tremendous task.

The CHAIRMAN. Let me ask you a question there. One of the best advertisements for wines and such things is the length of time that they have been in the bins. Now, if it is an accepted fact that these meats, after being thoroughly and properly cured, improve with age, it would be rather an advertisement for them that they had been in cold storage than otherwise, would it not?

Mr. MORRELL. No, sir; I rather doubt it, because I don't think that people understand that meats improve with age, as in the case of wines.

Senator OLIVER. I have always been under the impression that salted meats or cured meats, ham, for instance, within certain limits, the older the better.

Mr. MORRELL. I think that is correct, sir; within certain limits.

Senator LORIMER. That is not true as in the case of wines and liquors, which as they grow older continue to improve: the meats, you say, within certain limits.

Senator OLIVER. That is, I would not be particular about eating ham that was 20 years old; but if it was 20 months old I should be very glad to have it.

Senator SMITH. I think the difficulty is now the trade looks upon the case that the fresher the meat the better. It would have to go through a process of education to find out that thirty or sixty days would improve it rather than have any deteriorating effect; and you are trying to escape that process of education at your expense.

Mr. MORRELL. Yes, sir; and we are trying to get away from having to do those things. We are killing, we will say for arguments sake, 3,000 hogs a day. We get from those 3,000 hogs what you might call 6 or 8 primal parts; 2 hams, 2 shoulders, 2 bellies, and 2 backs. The hams and the shoulders and the bellies all would go to the cure. Those cuts that I have named when they come out of cure, when they have reached the age where we know them to be good, we then put those 18,000 pieces from that one day's work into cold store. There they are thrown into vats or tierces in their pickled condition. I mean by that the pickle has been drawn so as to arrest the cure. Under this bill we will at that point have to date every one of those pieces. Those meats are carried for thirty, sixty, or ninety days in that condition. They are taken out as the trade requires them under government supervision. They are washed, hung up in the smoking houses first of all to dry, and the fire is placed under them and they are smoked. That takes forty-eight to seventy-two hours, changing their condition. Any brand that you put on almost will be obliterated by that time. Then we wrap them up as the trade demands them, either in burlap or parchment paper.

Now, I expect that if this bill is made a law we will have to transfer that date from the meat onto those respective wrappers, and possibly onto the boxes that contain them. When we have reached the point where our first killing is cured, that 18,000 pieces per day is going to be multiplied several times, because of the necessary accumulation. Those meats, as I have already explained, required different lengths of time to cure, so that they will not all come out at the same time; they will be coming out every other week, as it were, and when we go to pack those hams and ship them out, one man, as I have already stated, will probably have five or six varying dates in the one package. We can not help it; it must of necessity be so. Now, for us to have to date every one of those pieces and take care of them through all those various processes, it seems to us almost an insurmountable task.

The CHAIRMAN. You probably would do that with a stamp, wouldn't you?

Mr. MORRELL. By stamp or a branding needle.

The CHAIRMAN. You would have to handle every one of those pieces. What is your practice?

Mr. MORRELL. We take them out by hand, out of the vats or the tierces.

The CHAIRMAN. Well, the time necessary to stamp them with a properly prepared stamp such as you undoubtedly have in connection with other parts of your business, it wouldn't be a very serious matter, would it?

Mr. MORRELL. Yes, sir; it is a very difficult thing to stamp sweet pickled ham; it is kind of slippery.

The CHAIRMAN. Probably you would not be required to do that. Those would be rules of inspection. A register of the contents of the vat would doubtless answer every purpose, and then when they came out of the vat and they were in condition to be stamped, why, they could be stamped; stamped "killed so and so," "salted so and so," and finally wrapped for shipment.

Senator OLIVER. Mr. Chairman, I did not understand that this bill was intended primarily to aim at what are usually understood as cured meats; and I think that the purpose of this act is to apply to get at the pedigree of meat or other food products that are offered for sale, that are put into cold storage in what might be termed their natural state and offered for sale in the way in which they come out of cold storage. I do not believe that it was intended to apply to cured meats at all, and I do not think that it ought to, because where the cold storage is simply an incident of the curing, as it is in this case, I do not think it ought to apply to hams and bacon and things of that sort.

Senator LORIMER. Well, if you follow the provisions of this bill to its ultimate conclusions, every pound of meat that is cured in a packing house and then packed in a can will have to carry all these provisions of this bill.

Senator OLIVER. Yes; I think it might be made to apply to canned meats, and it might under the strict interpretation of its language be applied to cured meats, but I do not think it was the intention that it should apply to cured meats.

Senator LORIMER. The strict enforcement of this bill would require that anything that goes into cold storage, if it is only there for one minute——

The CHAIRMAN. The cooling house would not be considered as cold storage.

Senator OLIVER. Cold storage is storage for the purpose of preservation.

Senator SMITH. Don't you think, Mr. Chairman, it would be well for us, if the bill arouses discussion among us as to its interpretation, that it be amended so as not to work a hardship to those who are engaged in a business the nature of which protects the purchasing public?

The CHAIRMAN. I think we will take these questions up in executive session, the question with reference to the bill. We only want to determine the scope of the testimony now.

Senator LORIMER. Except as it affects the testimony of the witnesses it would be all right to do that, for they ought to know what sort of testimony and information we are trying to secure.

The CHAIRMAN. I think they had better gather that information from the questions we ask them.

Senator LORIMER. Well, suppose we fail to ask them questions that are really vital to their industry, and when we come to prepare this bill we are not informed on some very important subjects? I think they really ought to know exactly what we propose to do with our legislation, in order that they may be able to answer all the questions and discuss every possible particle of legislation that we are going to propose. Otherwise, how are we to know, and how are they to know what we are trying to do?

The CHAIRMAN. I think it would be impracticable to discuss the opinion of members of the committee in the presence of the witnesses and the public. It is not customary to do it. We do those things in executive session; and we can just widen the scope as far as we please in taking testimony, and let them anticipate every possible view that may be taken of this measure.

Senator LORIMER. Now, then, if we are not going to do that, then it is our duty to have them give testimony affecting this bill as it stands now.

The CHAIRMAN. We will hear any testimony they choose to give. We will be very liberal in the testimony. We can give it such consideration as it may seem to merit afterwards. I would not be in favor of limiting their testimony. Let them go as far as they can anticipate the possibilities under this bill.

Senator LORIMER. This bill is probably, as the Senator from Pennsylvania suggests, more far-reaching than was intended by the drafters of it; yet, if we propose amending it, then, in fairness to these people, they should know to what extent we are going to amend it, or else address themselves to this bill with all its provisions.

The CHAIRMAN. From the discussion that has been had in the matter—this is a matter for public information—the bill will undoubtedly provide for two inspections, one at the time it goes into cold storage, and the other at the time it comes out, and those are to be all the amendments except as to form that have been suggested. But I think it is well to let the testimony come in to any reasonable extent, even though it may be, in our present judgment, beyond the scope of the bill. We can confine it to our views by the questions we ask, and then if the parties wish to widen it they may do it and give it such consideration as it may afterwards seem to merit.

Senator LORIMER. The only thing I am interested in is to not leave an impression on any person giving testimony here that probably we shall amend this bill to curtail some of these requirements, or that we will make the scope greater than what this bill provides, without giving them opportunity to address themselves to what we are going to do; and therefore I should say that on account of the condition of the bill now they had better address themselves to it just as it is.

The CHAIRMAN. Still, they ought to be allowed to go beyond that if they anticipate the questions.

Senator LORIMER. If they want to anticipate the questions; yes.

The CHAIRMAN. As far as our questions are concerned, we will probably draw out particular expressions or views as to what is within the scope of the bill, but I think we had better open the door just as wide, within reasonable bounds, as possible, and at any time, after the Senators have asked questions of a witness, or at any time let the witness go on and elaborate his views on it.

Senator LORIMER. I am entirely in favor of opening the door as wide as we can, but our discussion here—that is, the discussion among the Senators—sort of indicated for a moment that probably we would not go as far as the bill provides, and therefore the suggestion went to the witness that he probably better confine himself to fewer phases than this bill provides for.

The CHAIRMAN. I think it would probably work out better if we reserved those things hereafter for executive session—that is, our opinion as to the matter—and let the witness proceed, having gone as far as any member of the committee has required of him—to proceed as much further as he pleases.

Senator LORIMER. Yes; I think that will be all right.

The CHAIRMAN. So, Mr. Witness, you may make any statement that you desire.

Mr. MORRELL. We claim, Mr. Chairman, that our cold-storage facilities equalize the regularity of our supplies. Our hogs come in at two seasons of the year. We have what is known as the May-June run or crop; we also have the winter crop—November, December, January, and at times extends to February. The hogs are marketed at those two seasons in excess of any demand. We equalize the distribution of those receipts by using our cold-storage facilities to spread the supply over the season of demand. To get down to figures——

The CHAIRMAN. I would like to ask you a question right there. What is the average or is the average holding of hogs in cold storage about the same the year around with you?

Mr. MORRELL. You mean the manufacture?

The CHAIRMAN. The holding of meats.

Mr. MORRELL. When you speak of the hogs, you mean the cured meats, sir?

The CHAIRMAN. No; I mean the uncured meats.

Mr. MORRELL. Oh, yes; they are in cold storage; yes, sir.

The CHAIRMAN. About the same?

Mr. MORRELL. About the same. Of course it varies a little with the demand.

The CHAIRMAN. About how much uncured pork do you carry at any time?

Mr. MORRELL. How much at any time?

The CHAIRMAN. In your cold storage. I don't mean for cooling purposes; I mean outside of that.

Mr. MORRELL. Oh, in Ottumwa, not over, I should say, 100,000 pounds.

The CHAIRMAN. All right; now proceed.

Mr. MORRELL. We have two seasons of supply, as I have stated. Our cold-storage facilities enable us to take in those hogs during the season of large supply, slaughter them, and put the surplus away in cold storage and distribute this during the season of active demand, which, as a rule, is the season of light supply.

Now, take the breakfast bacon, for instance: The season of greatest demand is September, October, and November. The colder months coming on, the appetites of the people seem to be sharpened for something of that kind. The hog receipts at that time or previous thereto would not at all be in keeping with the demand, and consequently we have in our store the surplus that we have received during the previous May and June, and at times some of the surplus that we received back in the previous January; and in that way only can we care for the tremendous demands that are made on us at certain seasons of the year when the supply of hogs is light.

The CHAIRMAN. That is the cured bacon you are talking about?

Mr. MORRELL. Yes, sir.

The CHAIRMAN. You carry some of the January bacon over?

Mr. MORRELL. Exactly, sir. If we are deprived of our cold-storage facilities, it will compel us to reduce our prices, and the farmer will suffer. Our prices will be lower when the tremendous receipts are on than they would be under present conditions. I am now talking in relation of one week or one month to the other, because if we have to buy our stock and under this regulation get rid of it without using cold storage, why we would have to buy at a price that we can afford to take our chances in getting rid of the surplus. I want to say in connection with section 1, where one year is mentioned, that we have no objection whatever to that. We believe it is proper that a limit should be placed.

The CHAIRMAN. You seem to have no objection to the bill except as to the stamping and dating?

Mr. MORRELL. That is the important feature with us.

Senator SMITH. I would like to ask one question right here, as it would interest the public largely, because there are two sides to this question—those that buy and manufacture and prepare meats for sale and those that raise the hogs; both parties are interested. Is it not true that the farmers, or the raisers of these hogs, breed their sows at a time of the year that will cause the least expense to them? Now, the May crop, the pigs are allowed to come at such season as they won't have to carry them through the rigors of the winter; isn't that true?

Mr. MORRELL. I could hardly say that to be the case.

Senator SMITH. The point I am driving at is this—because it was brought out in a conversation with me in reference to this bill: Because their supply of hogs, as you testified a moment ago, was put upon the market at a time that suited them best and cheapest to them to raise these hogs, and that you were enabled to give them a better price, because you could then distribute the meat at less expense to yourself; keep it, and distribute it to the market, and therefore you became

their agent in keeping the price up; and in the argument that you are making I just wanted to bring out the fact that those farmers are now enabled, by virtue of the cold storage, to breed their pigs at seasons of the year when it is the cheapest to them, to sell them to you, and that you enabled them to get a better price by virtue of the cold storage.

Mr. MORRELL. Yes, sir; but I would say this, that the hogs always have arrived at the seasons named, May-June and November to February.

The CHAIRMAN. The natural breeding period.

Mr. MORRELL. Yes, sir. We get some right along. There is never a day that there are not hogs delivered, but when I say to you that the records will show that within the last few years we have had one day where 75,000 or 76,000 hogs arrived in Chicago in one morning, and in proportion at all other packing centers, St. Paul, Omaha, Kansas City, St. Joseph, St. Louis, Indianapolis, etc.—when that is figured up you can see the tremendous supply that will arrive probably one day in the winter. On the other hand, around September you will find the maximum receipts at Chicago on any one morning will be down as low as 8,000 or 10,000.

The CHAIRMAN. Are you a member of the American Warehouse Association?

Mr. MORRELL. No, sir.

The CHAIRMAN. Are you a member of any association of meat packers?

Mr. MORRELL. We are members of the Meat Packers' Association of New York.

The CHAIRMAN. But not out where you do business?

Mr. MORRELL. No, sir.

The CHAIRMAN. Have you a warehouse in New York? Do you send supplies there?

Mr. MORRELL. We have a branch house in New York, and we have a branch house in Boston.

The CHAIRMAN. Do you manufacture at your branch houses?

Mr. MORRELL. No, sir; we do not.

The CHAIRMAN. You manufacture entirely in Iowa?

Mr. MORRELL. We have a small plant in Sioux Falls, S. Dak.

The CHAIRMAN. How extensive is that plant?

Mr. MORRELL. Very small, sir; we are just extending it.

The CHAIRMAN. From where do you draw your supply of animals?

Mr. MORRELL. Oh, largely from a radius of 75 miles around Ottumwa.

The CHAIRMAN. It is local in its nature, then?

Mr. MORRELL. Yes, sir.

The CHAIRMAN. You do not buy through the stock yards of Chicago?

Mr. MORRELL. Never in Chicago; occasionally in times of great scarcity we have to go to the Missouri River, if we are needing some particular type of hog that can not be found in our immediate territory. Then we have to place an order with a commission house on the Missouri River—Kansas City or Omaha.

The CHAIRMAN. Does any member desire to ask any more questions?

Senator LORIMER. I think you suggested a difference in the methods of packing?

Mr. MORRELL. Yes, sir.

The CHAIRMAN. Will you explain what you meant by that?

Mr. MORRELL. As a result of experience, different packers have different cures. Some will cure with a little stronger brine and a shorter period. Others will cure with a weaker brine and a longer period. Some, after the curing age has arrived, will carry the stuff in cold storage for about thirty days; others will carry it for sixty days. Of course it all depends on the strength of the cure and the length of the cure. That is what I referred to as the difference in the cures. We all aim to reach perfection or as near as we possibly can. We have different ways of going about it.

The CHAIRMAN. Is it your idea that the brine, if the meat isn't punctured, actually permeates the meat all through?

Mr. MORRELL. Yes, sir; that is necessary in order to establish a perfect cure. Of course, in the case of a belly, which is thin, the curing process is very short; brine can very soon penetrate. In the case of a heavy ham, with a knuckle joint in there, it is a very different proposition. If the cure is as we try to have it nowadays, as the consuming public demand, we have to have a cure that will give an appetizing article, and for that reason we have to adopt a cure and a length of time—a process of cold storage that will give us the desired results.

I wanted to say that we were, of course, much interested in the question that the Senator asked as to whether this was intended to apply to cured beef or not. We, of course, hope not, and yet, from the language of the bill, we rather feared that it might.

The CHAIRMAN. We want testimony in regard to all classes, every character of meat, and then in our own discussion we will determine such questions as that.

Mr. MORRELL. Yes, sir. I wanted to say, if I might be permitted, that if it was desired that we suggest an amendment that will meet our contention——

The CHAIRMAN. That is always permissible for you to suggest any amendment that you desire; they will be considered at the proper time.

Mr. MORRELL. I will send it within a day or two to the chairman.

STATEMENT OF MR. JOHN S. MUNCE, OF INDIANAPOLIS, IND.

The CHAIRMAN. Mr. Munce, where do you reside?

Mr. MUNCE. I reside in Richmond, Va.

The CHAIRMAN. You are noted here as from Indianapolis, Ind.

Mr. MUNCE. Yes, sir. I represent Kennelson & Co., Indianapolis, Ind.

The CHAIRMAN. Tell us the capacity of the packing house in Indiana.

Mr. MUNCE. About a million and a half hogs yearly, sir.

The CHAIRMAN. What animals do you pack?

Mr. MUNCE. Do you mean for sale? We sell hogs, cattle, and sheep.

The CHAIRMAN. Give the quantity of each.

Mr. MUNCE. I will have to give you approximate figures, because I didn't know you were going to ask these questions. I haven't the exact figures. I have to approximate them.

The CHAIRMAN. Give us the approximate figures.

Mr. MUNCE. A million and a quarter to a million and a half hogs every year; a hundred thousand cattle every year, and seventy-five thousand sheep.

The CHAIRMAN. Any calves?

Mr. MUNCE. I couldn't tell you, sir.

The CHAIRMAN. Now, do you cure the meat of those animals?

Mr. MUNCE. We cure a large part of the hogs, and we sell considerable fresh.

The CHAIRMAN. What proportion do you cure of the million hogs?

Mr. MUNCE. I would have to get you the exact figures.

The CHAIRMAN. Suppose you give us the approximate now, subject to the exact figures.

Mr. MUNCE. Our sales in hogs of whole carcasses is very trifling; probably wouldn't amount to over, at the utmost, 5,000 per year.

The CHAIRMAN. Now, what other fresh——

Mr. MUNCE. It is understood that I am to be allowed to amend these figures? Simply speaking entirely from memory, or guessing at them—that is, the whole carcass?

The CHAIRMAN. Do you cool those in cold storage, or sell them right off?

Mr. MUNCE. After they are killed, they are sold right away.

The CHAIRMAN. On the market?

Mr. MUNCE. On the market.

The CHAIRMAN. So that you do not carry them in cold storage?

Mr MUNCE. If you mean——

The CHAIRMAN. I don't mean chilling at all.

Mr. MUNCE. Not cooled in cold storage.

The CHAIRMAN. Do you carry any meat in cold storage further than the chilling point?

Mr. MUNCE. I am a little embarrassed as to answering that question, just as Mr. Morrell was, by not understanding just what you mean. You see all our meats are carried in artificially cooled rooms after curing.

The CHAIRMAN. How long?

Mr. MUNCE. It depends on what use is going to be made of them.

The CHAIRMAN. You mean to say that you carry fresh meats in your cold storage until you are ready to dispose—to cure it? Is that it?

Mr. MUNCE. Yes, sir.

The CHAIRMAN. And so, you cure the hold over?

Mr. MUNCE. We cure the whole of it.

The CHAIRMAN. About what per cent is that of the slaughter? Do you mean by that the weight of the meat there?

Mr. MUNCE. As compared with the hogs. There was, subject to correction, something like 15 per cent. That would include such articles as fresh sides, fresh pork loins, and fresh shoulders.

The CHAIRMAN. That is the left over from the sale of fresh meat, is it?

Mr. MUNCE. No; I misunderstood your question. That is the proportion that is sold.

The CHAIRMAN. You sell about 15 per cent fresh?

Mr. MUNCE. Yes, sir.

The CHAIRMAN. And about 85 per cent of it is cured?

Mr. MUNCE. Cured.

Senator OLIVER. Does that refer to the cattle and sheep?
Mr. MUNCE. No, sir.
Senator OLIVER. You are only speaking of hogs?
Mr. MUNCE. Yes, sir.
The CHAIRMAN. Now, what per cent of the cattle are sold fresh?
Mr. MUNCE. Well, practically all. The quantity that is cured is very small. It is only certain parts of the cattle that are cured, such as the tongue.
The CHAIRMAN. Where do you find the market for that quantity of fresh hogs?
Mr. MUNCE. It is only 15 per cent of it that is sold fresh.
The CHAIRMAN. You are dealing with cattle now?
Mr. MUNCE. Dealing with cattle.
The CHAIRMAN. About 15 per cent of your cattle are sold fresh?
Mr. MUNCE. No, sir; 95 per cent of our cattle are sold fresh.
Senator OLIVER. The same applies to sheep?
Mr. MUNCE. Entirely.
The CHAIRMAN. Those are sold fresh?
Mr. MUNCE. Yes, sir.
The CHAIRMAN. How soon are they sold after slaughtering?
Mr. MUNCE. Just as soon as they are in shipping condition.
The CHAIRMAN. Within a few days?
Mr. MUNCE. Yes.
The CHAIRMAN. When they leave you do they go to the retail market, or do they go to other cold-storage plants?
Mr. MUNCE. We have branch houses in other States. They are shipped to those branch houses for sale, not for storage.
The CHAIRMAN. Do they put them in cold storage when they receive them?
Mr. MUNCE. They have cold-storage rooms to keep the product in good condition until it is sold.
The CHAIRMAN. Is any portion of your killing held for more than six months, either in your home house or the branch houses?
Mr. MUNCE. Do you mean fresh?
The CHAIRMAN. Yes.
Mr. MUNCE. I should say no, sir.
The CHAIRMAN. Well, is it held for more than three months?
Mr. MUNCE. I don't recollect any of it held as long as that.
The CHAIRMAN. Then you are not really a cold-storage establishment at all, are you? You are a kill and quick-sell business?
Mr. MUNCE. I am a curer—we are largely curers.
The CHAIRMAN. What you cure you sell off quickly; you don't hold it in cold storage for a long time?
Mr. MUNCE. No, sir. We might hold some back for a week or some short time like that. To hold it up for a number of months, it is not our practice.
The CHAIRMAN. You are not within the class of cold-storage houses that carry a large supply of fresh meat for the retail market?
Mr. MUNCE. No, sir.
The CHAIRMAN. What objections have you to this bill? The dating again?
Mr. MUNCE. Well, our objections to the bill are that—one serious objection to the bill is the dating; another objection is the fact that, according to a reasonable reading of it, it applies to all cured meats,

and at present the inspection which you ask for is, in effect, for cured meats as well as fresh meats in such establishments as ours under the meat-inspection laws, and the first section of the bill makes food adulterated if it is held for more than one year.

The CHAIRMAN. In cold storage.

Mr. MUNCE. How would that mean? That it would have to be held all the time in cold storage?

The CHAIRMAN. I think a liberal construction of that proposition would apply to the class of meats known as cold-storage meats, which are killed and put in cold storage with the view to holding them for a future market; with the view to being sold from the cold storage.

Senator SMITH. As fresh meats?

The CHAIRMAN. Yes; as fresh meats.

Mr. MUNCE. Of course, we can not object to it if the bill operates along that point, but we think probably it might include, for instance, all the meats that had been partly cured in the cold storage, brought out, partly cured, as in cold storage.

The CHAIRMAN. You mean that they hold the meat in cold storage preparatory to curing?

Mr. MUNCE. No, sir. They hold it in cold storage while it is in the process of curing. Take corned beef; you could not cure corned beef at a temperature of 90; you have to cure it at a temperature of 40.

The CHAIRMAN. If the bill means that some time during the process of manufacture it was in cold storage——

Senator OLIVER. How long does it take to cure corned beef?

Mr. MUNCE. It takes, according to the particular shape of the cut and the bone—it will take anywhere from ten to thirty days.

The CHAIRMAN. Well, I think you may pass over that question as to the meat being held in cold storage during a reasonable time or future conversion into canned beef or corned beef, and tell us your objection to dating your packages as to the time it was placed in cold storage or killed. That is more important.

Mr. MUNCE. You mean leaving out cured meats?

The CHAIRMAN. No. We want to know when your cured beef was killed.

Mr. MUNCE. Mr. Morrell has covered that point in this sense that as it reaches the consumer, or rather, as it reaches the trade we supply, which is the grocer or marketman, there is no probability that any package would reach him with uniform dates.

The CHAIRMAN. The killing of a certain date would all be stamped as of that date?

Mr. MUNCE. Yes.

The CHAIRMAN. Now, what objection is there to giving the date when the meat is killed—that is, when the life passes out of the animal—which is, perhaps, the most important of all the times, and if it is in cold storage the date when it is placed there and the date when it is taken out; not if it was in a cooling room for the purpose of fitting it to be handled, but if it was in a cold-storage room for the purpose of preservation—what objection is there to giving those dates other than the labor connected with it?

Mr. MUNCE. Just the complete confusion that will exist in the mind of the buyer.

The CHAIRMAN. Why need you bother about that? The buyer will soon become as intelligent as the seller.

Mr. MUNCE. Unfortunately, Mr. Chairman, after a long experience in dealing with them, the amount of ignorance and prejudice that can be created by a simple matter like that is colossal. One man would say, "I will not eat meat that is over thirty days old," and another will say, "I will not eat it unless it is ninety days old."

The CHAIRMAN. If the community divides, it is liable to break even. I do not think that is a very strong argument against the dating. If part of the people want old meat and part of the people want fresh meat, you would not be injured by it. You could furnish them with either, couldn't you?

Mr. MUNCE. Well, take the article of sausage; how are you going to label that?

The CHAIRMAN. How do you sell sausage; in what shape?

Mr. MUNCE. In a great many shapes; some that is made entirely out of cured meat.

The CHAIRMAN. What do you mean by "cured meat" that is used in sausages? What kind of cured meat do you put in a sausage?

Mr. MUNCE. Meat that has been salted or cured in brine.

The CHAIRMAN. Salt pork?

Mr. MUNCE. Yes; and salt beef.

The CHAIRMAN. And you make a sausage out of that?

Mr. MUNCE. Yes; all dry sausage is made out of cured meat.

The CHAIRMAN. Well, does any member of the committee desire to inquire further?

Senator SMITH. You don't handle poultry at all?

Mr. MUNCE. No, sir.

Senator SMITH. None of your rooms are used by outsiders for the purpose of storing?

Mr. MUNCE. Yes, sir. In our Baltimore house and our Syracuse house—branch house—we rent public cold storage for outside storage, for such articles as the public may choose to store there.

Senator SMITH. Who, in your branch houses, where you rent these cold-storage rooms—who are the persons that utilize them most?

Mr. MUNCE. They are mostly local merchants.

Senator SMITH. For the purpose of storing what nature of goods?

Mr. MUNCE. Butter, cheese, and eggs mostly.

Senator SMITH. Any great amount of poultry?

Mr. MUNCE. No, sir; very trifling.

Senator SMITH. That is, the local merchants rent these rooms to store things in?

Mr. MUNCE. Yes, sir.

The CHAIRMAN. If no member of the committee desires to ask any further questions, unless you have some further statement that you desire to make——

Mr. MUNCE. No, sir; except one thing which you have somewhat covered, and that is an article that the Senator referred to here—on the old ham. A good many people do not like hams unless they are over a year old. We have thought a strict construction of the first section of this bill would prevent those being sold.

The CHAIRMAN. My experience is not directed to the age of the ham. My experience is directed to the fact that the cold-storage ham is putrid.

Mr. MUNCE. What I was going to say was if the term "cold storage" in there didn't refer to merely what I think one of the Senators referred to as an incident in the preparation and cure of a ham?

The CHAIRMAN. Yes. I didn't make much of that point because I admit that some persons don't know how to do that which they undertake very often, and perhaps it was a bad job of curing.

Mr. MUNCE. If you would kindly permit me, I would like to supplement my evidence with a letter in which I would correct the statistics that I gave, and perhaps suggest a verbal amendment to the bill.

The CHAIRMAN. The committee will receive such suggestions in the nature of an amendment which you desire to offer.

STATEMENT OF ROBERT S. SINCLAIR, OF CEDAR RAPIDS, IOWA.

The CHAIRMAN. Do you desire to speak in favor or against this measure?

Mr. SINCLAIR. Against the measure.

The CHAIRMAN. Where do you reside?

Mr. SINCLAIR. At Cedar Rapids, Iowa.

The CHAIRMAN. And in what business are you engaged?

Mr. SINCLAIR. Pork and beef packing.

The CHAIRMAN. What is the name of the concern with which you are engaged?

Mr. SINCLAIR. T. M. Sinclair & Co. (Limited).

The CHAIRMAN. Is it a corporation or a firm?

Mr. SINCLAIR. A corporation.

The CHAIRMAN. Incorporated under the laws of what State?

Mr. SINCLAIR. Iowa.

The CHAIRMAN. Do you kill the animals that you store?

Mr. SINCLAIR. Yes, sir.

The CHAIRMAN. All of it?

Mr. SINCLAIR. Yes.

The CHAIRMAN. That is, you do all your own killing?

Mr. SINCLAIR. Yes, sir.

The CHAIRMAN. You are not a storage concern for custom work or for outsiders?

Mr. SINCLAIR. We store a little bit for some of the local butcher shops in Cedar Rapids.

The CHAIRMAN. To any considerable extent?

Mr. SINCLAIR. Possibly 2,000 or 3,000 pounds.

The CHAIRMAN. How much do you kill in the way of cattle per year, or day, or month?

Mr. SINCLAIR. Just speaking without the records I would say from 500 to 700 or 800 per week.

The CHAIRMAN. Do you put them in the cold storage—the cattle?

Mr. SINCLAIR. Well, for the purpose of our clear understanding, I would like to define what I call cold storage as I understand it, from the discussion here—that is what is in your mind as cold storage, that is, storage of the meat in a frozen state, and I would answer that we do not store it in cold storage.

The CHAIRMAN. Just describe what you do.

Mr. SINCLAIR. We store it in what I would call refrigerator space, that is, a temperature above freezing.

The CHAIRMAN. How long do you hold it in such storage?

Mr. SINCLAIR. From two days to a week.

The CHAIRMAN. Not longer than a week at any time?

Mr. SINCLAIR. Not unless under special order from some special butcher. Sometimes they wish us to ripen the beef, as we call it.

The CHAIRMAN. Well, to what extent does that go?

Mr. SINCLAIR. A very small extent.

The CHAIRMAN. Well, I mean as to time?

Mr. SINCLAIR. Only ten days, possibly two weeks.

The CHAIRMAN. How about the pork?

Mr. SINCLAIR. Most of that is cured.

The CHAIRMAN. How soon after being killed?

Mr. SINCLAIR. After being killed it is put into chilled rooms and we hold it for a while—about sixty hours.

The CHAIRMAN. Where do you send it then?

Mr. SINCLAIR. It is then cut and put into the cellars in cure.

Senator SMITH. I would like to ask a question just here, Mr. Chairman. Do you mean in your packing house that you don't freeze any of this—freeze it to preserve it indefinitely?

Mr. SINCLAIR. Yes; we do freeze some of it. There is a small portion of our product that we do freeze fresh.

Senator SMITH. And you keep it then how long?

Mr. SINCLAIR. It depends on the market to some extent. A good deal of it we ship almost immediately after it is frozen; for instance, beef livers we freeze and ship almost immediately.

Senator SMITH. Now, when you go to ship that which has been frozen, do you send it in refrigerator cars, or do you allow it to be shipped open?

Mr. SINCLAIR. Always in refrigerator cars.

Senator SMITH. Is that the only product that you have where you freeze for preservation, just such as liver?

Mr. SINCLAIR. We freeze beef cuts also, and sometimes pork cuts, pork loins, and pork trimmings—pork tenderloins.

The CHAIRMAN. Beef loins?

Mr. SINCLAIR. Yes; beef loins, and ribs particularly. Those are the two chief cuts that we freeze.

Senator SMITH. How long do you carry those? Suppose a market wasn't active?

Mr. SINCLAIR. It depends, of course, on the market; and in speaking without records I would say that we don't carry those over six or eight months at the very outside, for usually we strike a market that we want to get rid of them.

The CHAIRMAN. You do sometimes carry them beyond that time?

Mr. SINCLAIR. I wouldn't want to say.

The CHAIRMAN. Do you keep a record?

Mr. SINCLAIR. Oh, yes.

The CHAIRMAN. Can you tell when any part of your storage is put in and when it is taken out?

Mr. SINCLAIR. Yes.

The CHAIRMAN. Keep a record of every beef; could you furnish a record showing the length of time that these frozen meats were carried in storage?

Mr. SINCLAIR. Yes.

The CHAIRMAN. Will you do it?

Mr. SINCLAIR. I will.
The CHAIRMAN. Have you it here?
Mr. SINCLAIR. No; I haven't it here.
The CHAIRMAN. Will you be here at the hearings during the next week?
Mr. SINCLAIR. I did not expect to be here.
The CHAIRMAN. Well, when could you send it so that we could have it before the committee here?
Mr. SINCLAIR. I could put it in letter form and send it here by next week.
The CHAIRMAN. Showing the record of the oldest storage that you have as well as the other; showing the quantity and the time when it was placed in cold storage? Can you do that?
Mr. SINCLAIR. Yes, sir.
The CHAIRMAN. We would be very glad to have it.
Mr. SINCLAIR. Yes, sir.
The CHAIRMAN. Now, how about the pork?
Mr. SINCLAIR. There is only a very small part of the pork that goes into cold storage.
The CHAIRMAN. This goes into the real cold storage?
Mr. SINCLAIR. Yes, sir; but I think a small portion of it.
The CHAIRMAN. What do you call a small portion? You deal in large figures.
Mr. SINCLAIR. I do not think that we put more than ten to twenty thousand pounds in cold storage in a year, out of about 550 or 1,000 hogs in a year.
The CHAIRMAN. Now, do you ship the products from the home place, the killing place, to the branch house?
Mr. SINCLAIR. Yes, sir.
The CHAIRMAN. What did you say the other places were? You spoke of two houses; you have two houses?
Mr. SINCLAIR. No; we have only the one house.
The CHAIRMAN. Oh, you have only the one. Well, do you ship to other cold-storage plants at all from your killing place?
Mr. SINCLAIR. No.
The CHAIRMAN. You have no combination by which you send your products any place else for sale than your own?
Mr. SINCLAIR. Yes; we ship to our branch houses.
The CHAIRMAN. Where are the branch houses?
Mr. SINCLAIR. We have one in Des Moines, another one in Davenport, and Dubuque, and Clinton, Iowa.
The CHAIRMAN. Take the one in Des Moines. You don't kill any in Des Moines?
Mr. SINCLAIR. No.
The CHAIRMAN. Then it is a receiving house from your killing place?
Mr. SINCLAIR. Yes.
The CHAIRMAN. Well, what proportion of your stuff do you send to Des Moines?
Mr. SINCLAIR. To Des Moines—the fresh stuff. On our fresh stock about 40,000 pounds a month.
The CHAIRMAN. That is fresh-killed meats of different kinds, is it?
Mr. SINCLAIR. Yes.
The CHAIRMAN. Is it placed in cold storage in Des Moines?

Mr. SINCLAIR. Yes.
The CHAIRMAN. Frozen?
Mr. SINCLAIR. It is not frozen stuff.
The CHAIRMAN. Well, is it frozen after it reaches Des Moines?
Mr. SINCLAIR. No.
The CHAIRMAN. What kind of a cold-storage plant is that at Des Moines?
Mr. SINCLAIR. More what you would call an ordinary butcher's cooler, large enough to hang say twenty or thirty cattle.
The CHAIRMAN. And the other branch house, where is the next one?
Mr. SINCLAIR. At Davenport.
The CHAIRMAN. Do you freeze any meat there?
Mr. SINCLAIR. We do not freeze any meat there.
The CHAIRMAN. Do any of your branch houses freeze meat at all?
Mr. SINCLAIR. No.
The CHAIRMAN. Do you send any of the meat you freeze to your branch houses?
Mr. SINCLAIR. Well, very seldom. We do send some to some of our branch houses; most of it, except Chicago. We have a branch there. We send some of it there.
The CHAIRMAN. You don't kill in Chicago at all, do you?
Mr. SINCLAIR. No.
The CHAIRMAN. Do you sell fresh meats in Chicago?
Mr. SINCLAIR. Yes.
The CHAIRMAN. Freeze them there?
Mr. SINCLAIR. We freeze some there.
The CHAIRMAN. How long do you hold it there frozen? Will you kindly include that in your statement—the length of time that you hold frozen meats or any other meats in cold storage?
Mr. SINCLAIR. Yes.
The CHAIRMAN. You are practically a curing house, are you not?
Mr. SINCLAIR. Yes.
The CHAIRMAN. That is, you cure the greater part of your product?
Mr. SINCLAIR. Yes.
The CHAIRMAN. And after you use it you hold it in cold storage?
Mr. SINCLAIR. Yes; sometimes.
The CHAIRMAN. How long do you hold it?
Mr. SINCLAIR. I would say not over three or four months, as a rule.
The CHAIRMAN. You hold some beyond that time?
Mr. SINCLAIR. Not very much; I don't think we have; I think I have given you what seems to me to be the extreme limit.
The CHAIRMAN. Does any member of the committee want to ask any questions?
Mr. SINCLAIR. May I just make one more statement about this question of branding which we all object to chiefly? It would be practically impossible to brand this meat that goes into cure, and, of course, that is where we feel that this bill, if put through as worded now, would cause us the greatest trouble. The difficulty with the branding would be that it is practically impossible to brand each piece of meat. The Government itself—the Agricultural Department, the department of Animal Industry—has never yet been able to give us a method of branding that is satisfactory and will pass through the various processes of cure, etc.

The CHAIRMAN. I think there is nothing said about branding the meat in this bill; it is to be labeled and dated. There are many processes by which it can be done. I have suggested the proposition that the meat that went into the vats and came out could be very easily handled in that regard. When it is packed it could be branded or labeled, as you found it convenient, as to when it went in and when it came out. We would be glad to hear any suggestions from you as to that.

Mr. SINCLAIR. Mr. Morrell spoke of the difficulties that we would have in our export business, which would be practically insurmountable in that line, and along that same line there are a good many local houses, in our neighborhood, at least, where so much of the hog supply comes from, that we meet the same competition there with meat that would not be dated.

The CHAIRMAN. Do you think the people would all insist on having very recently killed meat?

Mr. SINCLAIR. There would undoubtedly be objection to anything that would bear an old date.

The CHAIRMAN. You think the public is not educated up to the belief that the longer meat is kept the better it is?

Mr. SINCLAIR. No; I don't think they are.

The CHAIRMAN. Well, do you think that the longer the meat is kept the better it is?

Mr. SINCLAIR. Within a certain range.

The CHAIRMAN. I mean to the consumer; to the actual eater of the meat?

Mr. SINCLAIR. Yes; within certain limits.

The CHAIRMAN. Where would you place the limit?

Mr. SINCLAIR. That depends on the piece of meat that you are considering. You couldn't put a general limit on all the product.

The CHAIRMAN. Meat that has been kept without any curing or protective process for a week, is that ever put in cold storage at the end of a period, say of a week?

Mr. SINCLAIR. Yes; in some cases.

The CHAIRMAN. It would not be in very good condition then, would it?

Mr. SINCLAIR. No; it wouldn't.

The CHAIRMAN. It is not true that the large markets in the cities especially, and perhaps elsewhere, put what they call their left-over stuff in cold storage for the purpose of having it salted for corned-beef, or dried, or frozen to be held for subsequent sale?

Mr. SINCLAIR. Yes.

The CHAIRMAN. That is true to a very large extent, isn't it?

Mr. SINCLAIR. Yes.

The CHAIRMAN. That is perhaps one of the most objectionable features of the present system, is it not, that it fills the cold-storage freezing houses with left-over meat—the tail of the market?

Mr. SINCLAIR. It has put a good deal of meat, or rather product, in there that is not in the condition that it ought to be; that is true.

The CHAIRMAN. And you think inspection when meat goes in as important as inspection when the meat comes out?

Mr. SINCLAIR. I do.

The CHAIRMAN. Do you know anything about the chicken storage?

Mr. SINCLAIR. No.

The CHAIRMAN. And fowls of various kinds?

Mr. SINCLAIR. No; I do not know anything about that.

The CHAIRMAN. Well, unless some members of the committee desire to ask some questions——

Senator LORIMER. Do you think it makes any difference how old meat is that is hermetically sealed in a tin can?

Mr. SINCLAIR. I have never had any experience.

Senator LORIMER. You do not can meats?

Mr. SINCLAIR. We do not can meats; no.

Senator Heyburn submitted the following:

DEPARTMENT OF AGRICULTURE,
OFFICE OF THE SECRETARY,
Washington, D. C., April 25, 1910.

Hon. W. B. HEYBURN,
Chairman Committee on Manufactures,
United States Senate, Washington, D. C.

MY DEAR SENATOR: I take pleasure in sending herewith a letter and a statement from Dr. A. D. Melvin, Chief of the Bureau of Animal Industry of this department, giving certain information in reply to your letter to him of April 11 with regard to a bill (S. 7649) to prevent the sale or transportation in interstate or foreign commerce of articles of food held in cold storage for more than one year, and for regulating traffic therein, and for other purposes, now under consideration by your committee.

Very truly, yours,

JAMES WILSON, *Secretary.*

UNITED STATES DEPARTMENT OF AGRICULTURE,
BUREAU OF ANIMAL INDUSTRY,
Washington, D. C., April 25, 1910.

Hon. JAMES WILSON,
Secretary of Agriculture.

SIR: In accordance with a request dated April 11 from Hon. W. B. Heyburn, chairman of the Senate Committee on Manufactures, I have had prepared and have the honor to submit herewith a statement showing the number, by States, of each species of live stock killed for food under this bureau's inspection during the calendar year 1909.

The bureau is unable to furnish figures showing the total number of animals killed for food in the United States, including those killed without federal inspection. It is estimated roughly, however, that the total slaughter for the year 1909, including the slaughter under inspection, as given in the table, was about as follows: Cattle, 12,000,000; calves, 5,000,000; sheep and goats, 20,000,000; swine, 60,000,000. The bureau is unable to give even an estimate as to poultry killed.

Senator Heyburn also wishes a list of abattoirs in the United States and if possible the cold-storage plants. I send herewith a printed directory showing the slaughtering and packing establishments at which inspection is conducted by the bureau. The establishments at which slaughtering is done are indicated by a star. The bureau is unable to furnish a list of abattoirs not under its inspection and is also unable at this time to furnish a list of cold-storage plants. The bureau's inspectors in charge of meat inspection at various points, however, have been directed to report concerning cold-storage plants in their respective localities and I hope to be able to give some information on this subject later.

Very respectfully,

A. D MELVIN, *Chief of Bureau.*

Summary of animals slaughtered under inspection of the Bureau of Animal Industry, United States Department of Agriculture, during the calendar year 1909.

	Cattle.	Calves.	Sheep.	Goats.	Swine.
California	170,395	39,535	524,867	1,703	156,217
Colorado	47,399	7,244	42,876	22	243,908
Connecticut	.....	256	.....	.....	135,908
Delaware	7,236	1,055	3,599	4	9,767
District of Columbia	14,599	13,077	35,406	4	102,471
Georgia	8,988	4,083	1,205	50	10,544
Idaho	3,007	964	4,403	.....	5,128
Illinois	2,210,123	496,250	3,977,674	29,008	6,956,524
Indiana	213,707	46,005	51,968	18	1,577,801
Iowa	241,092	21,574	49,655	151	2,414,143
Kansas	1,402,910	211,915	1,113,061	57,649	3,983,251
Kentucky	11,016	1,675	2,070	42	184,421
Louisiana	62,586	4,123	415	369	7,672
Maine	488	365	22,928	4	18,148
Maryland	47,282	4,378	21,563	56	501,358
Massachusetts	63,785	90,209	333,958	784	1,415,067
Michigan	22,014	16,354	89,176	15	439,779
Minnesota	132,820	55,814	139,334	27	922,173
Missouri	526,190	65,496	520,552	2,953	2,428,115
Montana	2,413	820	3,469	18	6,765
Nebraska	676,803	49,833	1,180,613	4,761	1,996,466
New Hampshire	127	53	78	.....	278
New Jersey	37,787	72 135	325,343	152	1,290,739
New York	599,701	403,013	1,901,448	88	1,584,894
Nevada	4,771	2,564	16,158	.....	4,991
Pennsylvania	169,249	91,033	315,059	6	909,563
Ohio	218,275	119,966	233,108	344	1,545,499
Oklahoma	2,160	628	8	3	13,636
Oregon	45,529	4,305	88,361	.....	65,137
Rhode Island	.....	24	.....	.....	101,492
South Dakota	.....	.....	.....	.....	22,467
Tennessee	6,289	1,323	3,318	76	51,692
Texas	558,371	232,703	83,164	192	877,155
Utah	11,336	1,445	17,764	.....	15,306
Vermont	1,331	20	3	.....	95
Virginia	3,884	87	131	.....	86,896
Washington	100,779	7,870	206,406	1,933	206,436
West Virginia	8,725	7,864	6,661	.....	118,906
Wisconsin	69,229	109,623	38,331	118	988,988
Wyoming	1,318	39	606	.....	3,501
Total	7,703,714	2,185,730	11,364,739	100,550	31,403,192

UNITED STATES DEPARTMENT OF AGRICULTURE,
BUREAU OF CHEMISTRY,
Washington, D. C., April 26, 1910.

Hon. W. B. HEYBURN, *United States Senate.*

DEAR SENATOR: I am sending you the printed documents which I promised to lay before the committee during my hearing yesterday. These notices of judgment which are printed are not all based on any charges growung out of cold storage, but they were all cold-stored articles—that is, articles that were kept in cold storage. The beer and butter against which the proceedings have been instituted were products kept in cold storage. The cases which bear particularly, however, upon the present hearings are those relating to eggs, on which quite a number of judgments have been entered. The cream and milk have little or no practical bearing upon the present investigations, but represent bodies which are commonly kept in cold storage pending their delivery to the consumer. In cases of cream and milk it appears to me that no cold storage should be permitted except that incident to transportation from the producer to the consumer, and this should be made clear in the bill, so that it will not be possible to store such substances as milk and cream at all except for transportation and delivery.

The printed bulletins give the information respecting the results of the investigation in so far as they have been published. You will find additional information on this subject contained in the report which I made through the Secretary of Agriculture to Senator Lodge, which I believe has been offered for publication as a document to go with the discussion of the bill.

On account of a very important hearing at which I have to preside this morning, I beg you to excuse me from attending the morning session. I shall be pleased hereafter to attend as often as my duties here may permit and as often as you may require, irrespective of my routine duties at the bureau.

I also desire to say that under section 10 a large number of stored eggs of different kinds have been seized, list of which I append. This list of course you will understand is not intended for publication, but to give you an idea of the activities of the bureau in respect to these frozen products.

I also attach a list of cases which have been reported to the district attorneys for prosecution in criminal cases, which of course is intended for your personal information as indicated above, and not for publication in the records of the hearings.

Respectfully,

H. W. WILEY, *Chief.*

[F. & D. No. 36-C. Issued March 17, 1910. United States Department of Agriculture, office of the Secretary.]

ADULTERATION OF ICE CREAM.

[Notice of judgment No. 213, food and drugs act.]

In accordance with the provisions of section 4 of the food and drugs act of June 30, 1906, and of regulation 6 of the rules and regulations for the enforcement of the act, notice is given that on the 22d day of November, 1909, in the police court of the District of Columbia, judgment was rendered in the case of the United States *v.* Hugh Wallis, a prosecution upon an information in substance charging said defendant with having sold and offered for sale in the District of Columbia a quantity of so-called ice cream which was adulterated in that it contained less than 14 per cent of milk fat, and further in this, that starch and gelatin had been mixed and packed with it so as to reduce, lower, and injuriously affect its quality. The defendant on the aforesaid date pleaded guilty to the information. The court imposed upon him a fine of $25.

The facts on which the prosecution was based were as follows:

On May 11, 1909, an inspector of the health department of the District of Columbia, acting under authorization of the Secretary of Agriculture to Dr. William C. Woodward, health officer of said District, procured a sample of what was represented to be ice cream from Hugh Wallis, 617 Twelfth street NW., Washington, D. C., which sample was analyzed by said health department and found to contain less than 14 per cent of milk fat, and also to contain starch and gelatin. The analysis having disclosed that said article was adulterated within the meaning of section 7 of the food and drugs act, said Hugh Wallis was duly notified thereof and given an opportunity to be heard in regard to said adulteration, and it appearing that the act had been violated, the health officer reported the facts to the United States attorney for the District of Columbia, who filed an information against the said Hugh Wallis, with the result hereinbefore stated.

JAMES WILSON,
Secretary of Agriculture.

WASHINGTON, D. C., *February 21, 1910.*

[I S. Nos. 19881-a, 19883-a, 19899-a, 19900-a. F. & D. Nos. 804 and 686. Issued March 19, 1910. United States Department of Agriculture, Office of the Secretary.]

ADULTERATION OF MILK.

[Notice of judgment No. 219, food and drugs act.]

In accordance with the provisions of section 4 of the food and drugs act of June 30, 1906, and of regulation 6 of the rules and regulations for the enforcement of the act, notice is given of the judgment of the court in the case of the United States *v.* Henry Boberink, of Lawrenceburg, Ind., a prosecution lately pending in the district court of the United States for the district of Indiana for violation of section 2 of the aforesaid act in the shipment from Indiana to Ohio by the aforesaid defendant of milk which was adulterated within the meaning of section 7 of the act, in that it consisted in part of a filthy, decomposed, and putrid animal substance. On November 30, 1909, the defendant having been arraigned upon an indictment alleging the aforesaid shipment by him of adulterated milk, entered his plea of guilty and was sentenced by the court to pay a fine of $10.

This case was based upon a sample of milk procured by an inspector of the United States Department of Agriculture on March 16, 1909, from the shipping can after the milk had reached Cincinnati, Ohio, from the consignor for delivery to Tom Davis, Cincinnati, Ohio. The inspector saw the shipment of milk delivered to the railroad

at the point of shipment, identified it with its consignor, and accompanied it to Cincinnati. The aforesaid samples were duly analyzed in the Bureau of Chemistry of the United States Department of Agriculture and found to consist in part of a filthy, decomposed, and putrid animal substance.

It appearing from the aforesaid analysis that the milk was adulterated, the Secretary of Agriculture gave notice to Tom Davis, the dealer from whom the sample was procured, and also to Henry Boberink, the shipper, and gave them an opportunity to be heard. The said Henry Boberink being the party solely responsible for the shipment, and having failed to show any fault or error in the result of the said analysis, and it having been determined that the milk was adulterated, the said Secretary on August 20, 1909, reported the facts and evidence to the Attorney-General, by whom they were referred to the United States attorney for the district of Indiana, who presented the facts and evidence to the grand jury, by whom an indictment was returned against the aforesaid defendant, with the result hereinbefore stated.

JAMES WILSON,
Secretary of Agriculture.

WASHINGTON, D. C., *February 23, 1910.*

[N. J. 132.]

In accordance with the provisions of section 4 of the food and drugs act of June 30, 1906, and of regulation 6 of the rules and regulations for the enforcement of the act, notice is given of the judgments of the court in the cases of the United States *v.* M. Boyle (F. & D. No. 439), United States *v.* C. E. Williams (F. & D. No. 440), and United States *v.* J. C. Kotzenberg (F. & D. No. 441), prosecutions lately pending in the district court of the United States for the eastern district of Wisconsin for violations of section 2 of the aforesaid act in the shipment from Wisconsin to Illinois by the aforesaid defendant, M. Boyle, of milk which was adulterated within the meaning of section 7 of the act, in that water had been mixed with and substituted in part for the milk, thereby lowering and reducing its quality and strength; and in the shipment by the aforesaid defendants, Williams and Kotzenberg, from Wisconsin to Illinois of milk which was adulterated within the meaning of section 7 of the act, in that cream, a valuable constituent thereof, had been abstracted therefrom. On June 26, 1909, the defendant, M. Boyle, having been arraigned upon an information alleging the aforesaid shipment by him of adulterated milk, entered his plea of guilty and was sentenced by the court to pay a fine of $25. On April 16, 1909, the defendants, C. E. Williams and J. C. Kotzenberg, having been arraigned upon informations alleging the aforesaid shipments by them of adulterated milk, entered their pleas of guilty and were sentenced by the court to pay a fine of $25 each and stand committed to jail until such fine should be paid.

These cases were based upon samples of milk procured by inspectors of the United States Department of Agriculture on August 28, 1908, from the shipping cans after the milk had reached Chicago from the respective consignees and points of shi ment, namely, M. Boyle, Woodworth, Wis.; C. E. Williams, Genoa Junction, Wis.; and J. C. Kotzenberg, Bassett, Wis., for delivery to J. H. Tylen, F. Deitmer, and Theodore Renz, respectively. The inspectors saw the said several shipments of milk delivered to the railroads at the points of shipment, identified each shipment with its consignor, and accompanied them to Chicago. The aforesaid samples were duly analyzed in the Bureau of Chemistry of the United States Department of Agriculture, and it was found that those taken from the milk shipped by the said Williams and Kotzenberg contained, respectively, an average of a little less than 8.70 per cent of solids not fat and 26 per cent of milk fat, and 8.50 per cent of solids not fat and 2.6 per cent of milk fat, indicating that the milk had been skimmed, and that those taken from the milk shipped by said Boyle contained a little less than 7.36 per cent of solids not fat and 3.1 per cent of milk fat, indicating that water had been added to the milk.

It appearing from the aforesaid analyses that the milk was adulterated, the Secretary of Agriculture gave notice to the respective parties and gave them an opportunity to be heard, but the said parties having failed to show any fault or error in the result of the said analyses and it being determined that the milk was adulterated, the said Secretary, on February 17, 1909, reported the facts and evidence to the Attorney-General, by whom they were referred to the United States attorney for the eastern district of Wisconsin, who filed informations against the aforesaid defendants, with the result hereinbefore stated.

JAMES WILSON,
Secretary of Agriculture.

WASHINGTON, D. C., *January 10, 1910.*

ADULTERATION OF MILK (ADDED WATER).

[N. J. 125.]

In accordance with the provisions of section 4 of the food and drugs act of June 30, 1906, and of regulation 6 of the rules and regulations for the enforcement of the act, notice is given that on the 9th day of April, 1909, in the district court of the United States for the eastern district of Kentucky, Thomas Corbin, W. M. Ficke, W. F. Johnson, B. M. Mullins & Sons, Joseph Geiger, Theodore Groger, Henry Nostheide, Charles Peoples, jr., W. F. Hogan, J. C. Kirby, John Meiman, Owen Dunnaway, Stephen Schackle, W. H. Perry, Henry Ducker, B. Evers & Sons, and Willie Reeves, having been arraigned upon informations theretofore filed by the United States attorney severally charging them with a violation of section 2 of the aforesaid act in shipping and delivering for shipment, from places in Kentucky, to Cincinnati, Ohio, milk adulterated in this, that water had been mixed therewith so as to reduce and lower its quality and strength, and that water had been substituted in part for the milk, and having severally entered their plea of guilty, the court sentenced each of them to pay a fine of $15.

The facts in the cases were as follows:

On September 1, 2, and 3, 1908, inspectors of the United States Department of Agriculture procured samples of milk from cans shipped to Cincinnati, Ohio, from outlying points in Kentucky. Fifteen of the consignments from which samples were taken were made to French Brothers Dairy Company by Thomas Corbin, Erlanger; W. M. Ficke, Buffington; W. F. Johnson, Demosville; B. M. Mullins & Sons, Catawba; Joseph Geiger, Erlanger; Theodore Groger, Devon; Henry Nostheide, Devon; Charles Peoples, jr., Lynn; J. C. Kirby, Lynn; John Meiman, Devon; Owen Dunnaway, Butler; Stephen Schackle, Butler; W. H. Perry, Devon; B. Evers & Sons, Sanfordtown; and Willie Reeves, Butler; one of the consignments was made to Liberty Ice Cream Company by W. F. Hogan, Devon, and one to Moreland Dairy and Creamery Company by Henry Ducker, Butler. The inspectors saw all the aforesaid consignments of milk, except that of B. Evers & Sons, which was transported by wagon across the bridge from Covington, delivered to, and loaded by the respective railroads and accompanied them to Cincinnati, where the samples were procured. Analyses of the several samples were duly made in the Bureau of Chemistry of the United States Department of Agriculture, and it was found that in each case water had been added to and mixed with the milk. The milk was adulterated within the meaning of section 7 of the food and drugs act in that a substance, water, had been mixed with it so as to reduce and lower its quality and strength and a substance, water, had been substituted in part for milk. The shippers were duly cited to hearings, and having failed to show any error in the results of the analyses, the Secretary of Agriculture reported the facts to the Attorney-General, who forthwith transmitted the evidence to the United States attorney for the eastern district of Kentucky, by whom informations were filed against the aforesaid shippers, with the results hereinbefore stated.

JAMES WILSON,
Secretary of Agriculture.

WASHINGTON, D. C., *January 10, 1910.*

ADULTERATION OF MILK (WATER).

[N. J. 11.]

In accordance with the provisions of section 4 of the food and drugs act of June 30, 1906, and of regulation 6 of the rules and regulations for the enforcement of the act notice is given that on the 24th day of June, 1908, in the district court of the United States for the southern district of Illinois, southern division, in a criminal prosecution by the United States against C. Deterding for violation of section 2 of the aforesaid act in shipping and delivering for shipment into interstate commerce adulterated milk—that is to say, milk that contained an excess of water—the defendant having entered a plea of guilty, a judgment was rendered by the court in substance and form as follows:

In the district court of the United States for the southern district of Illinois, southern division.

Wednesday, June 24th, A. D. 1908.

Present, the Honorable J. OTIS HUMPHREY, judge.

THE UNITED STATES *vs.* C. DETERDING.	Criminal information. Term No. 109. General No. 10999. Violation of food and drugs act.

And now on this 24th day of June, A. D. 1908, comes the United States, the plaintiff in this case, by W. A. Northcott, esq., United States attorney for the southern district of Illinois, and comes also the defendant, C. Deterding, in person.

And the said defendant being arranged on the criminal information herein, for plea thereto says that he is guilty as therein charged, and he having nothing to say why sentence should not be pronounced against him, it is therefore considered and adjudged by the court that the said defendant C. Deterding, for the offense by him committed in manner and form as charged in the said criminal information and as by him confessed, do pay a fine to the United States in the sum of one hundred dollars, together with the costs of this prosecution, amounting to the sum of thirty-one dollars and ninety-five cents, and that execution issue therefor.

The facts in the case were as follows:

On October 1, 1907, an inspector of the Department of Agriculture obtained in St. Louis, Mo., samples of milk from a consignment of that article shipped from Formosa, Ill., by C. Deterding. One of the samples was forthwith subjected to analysis in the Bureau of Chemistry, Department of Agriculture, and the following result obtained and stated:

Fat (per cent)	3.2
Non-fatty solids (per cent)	6.33

Milk is defined in the "Standards of Purity for Food Products," promulgated under authority of law by the Secretary of Agriculture, as follows:

"Milk is the fresh, clean, lacteal secretion obtained by the complete milking of one or more healthy cows, properly fed and kept, excluding that obtained within fifteen days before and ten days after calving, and contains not less than eight and one-half (8.5) per cent of solids not fat and not less than three and one-quarter (3.25) per cent of milk fat."

The milk in question was, therefore, adulterated within the meaning of section 7 of the act, in that it contained an excessive amount of water, thereby reducing its quality and strength.

On January 15, 1908, the Secretary of Agriculture accorded C. Deterding a hearing. As there was nothing disclosed at this hearing tending to show any fault or error in the result of the analysis above stated, the facts were on April 30, 1908, reported to the Attorney-General and by him to the United States attorney for the southern district of Illinois, who on the 1st day of June, 1908, filed an information in the court aforesaid alleging the shipment and delivering for shipment by the said defendant from Formosa, in the State of Illinois, to St. Louis, in the State of Missouri, of adulterated milk with the result set forth in the judgment hereinbefore given.

H. W. WILEY,
F. L. DUNLAP,
GEO. P. MCCABE,
Board of Food and Drug Inspection.

Approved:
W. L. MOORE,
Acting Secretary of Agriculture.

WASHINGTON, D. C., *July 15, 1908.*

ADULTERATION OF MILK (WATER).

[N. J. 37.]

In accordance with the provisions of section 4 of the food and drugs act of June 30, 1906, and of regulation 6 of the rules and regulations for the enforcement of the act, notice is given of the judgment of the court in the case of the United States against Andreas Griebler, lately pending in the district court of the United States for the eastern district of Illinois, wherein the said Griebler was charged with the violation of section 2 of the aforesaid act alleged to have been committed in the shipment and delivery for shipment of adulterated milk—that is to say, milk which contained an excess of water—from Illinois to Missouri.

The defendant having been arraigned and pleaded not guilty, the case was submitted to a jury upon the evidence and argument of counsel and the following instructions of the court:

"WRIGHT, *D. J.*, charging the jury:

"Gentlemen of the jury: In this case the Government charges the defendant that he shipped and delivered for shipment from Trenton, in the county of Clinton, in

the State of Illinois, to Carlyle Dairy Company, at St. Louis, in the State of Missouri, an article of food, to wit, a certain quantity of milk which was then and there adulterated by having mixed and packed therewith water so as to reduce and lower and injuriously affect the quality and strength of said milk, contrary to the statute, etc.

"There are two counts in this information, but it isn't necessary to specifically call your attention to more than one, because, as I understand the prosecution, they are not claiming that the statute was violated but the one time.

"The act of Congress makes it unlawful for a person to ship an article of food from one State to another State, or to deliver such article for shipment from one State to another State, which, at the time of the delivery or shipment, was, or had been, adulterated. The adulteration to be contrary to the statute must be, first, if any substance has been mixed and packed with it so as to reduce or lower or injuriously affect its quality or strength; second, if any substance has been substituted wholly or in part for the article.

"Before the Government can claim a conviction at your hands it must be proved by the evidence in the case beyond a reasonable doubt that the defendant is guilty as charged in the information. If, after a fair and impartial investigation, you have a reasonable doubt of his guilt, as charged in the information, then it would be your duty to acquit him. If, after the same investigation of all the evidence in the case, you have an abiding conviction of his guilt, then it would be your duty to convict him.

"A reasonable doubt is not such a doubt as is engendered by imagination, or by an undue sensibility of the consequence of your verdict. Nor can you go outside of the evidence. A doubt must arise from a fair and impartial consideration of the evidence, and it is such a doubt as if interposed in the graver transactions of life it would cause a reasonable man to pause before acting upon it. Now, if you have such doubt of the guilt of the defendant in this case as I have endeavored to define, you will acquit him. If you have an abiding conviction of the truth of this charge, then you will convict.

"The real issue in this case is whether, under the evidence here, the milk, at the time it was shipped, or delivered for shipment, contained water. That is the charge in the information. It is not necessary for the Government to prove that the defendant actually put the water in himself, nor is it necessary to prove that he knew at that time there was water in the milk, if there was water in it. Under this statute, for the protection of the public, those who consume, a person who undertakes to ship food products must be held to know what it is he puts into commerce, must know at his own peril what it contains. It is sufficient if you believe he delivered the milk for shipment, or shipped it, and that there was water in it, and that the water was mixed therewith so as to reduce or lower or injuriously affect its quality or strength, and as to that question you know as much as any witness. It is not a matter for an expert. It is a matter of everyday knowledge as to whether water in the milk would reduce or lower its strength. Everybody knows that it does. So if you believe from the evidence that there was water in the milk you will convict the defendant. If you find there was no water in it you will acquit him."

And on November 30, 1908, the jury returned a verdict of not guilty, whereupon the said defendant was discharged from further custody.

The facts in the case were as follows:

On September 30, 1907, an inspector of the Department of Agriculture obtained samples of milk from a consignment of milk shipped by Andreas Griebler, from Trenton, Ill., to St. Louis, Mo. One of the samples was forthwith analyzed in the Bureau of Chemistry of said department and the following results were obtained and stated:

Specific gravity at 15.5°/15.5° C		1.0259
Fat	per cent	4.67
Total solids	do	12.06
Solids not fat	do	7.39
Ash	do	.63
Refraction at 20° C		37.1
Test for nitrates		Very strong.
Conclusions		Watered.

The standard for milk as defined in "Standards of Purity for Food Products," Circular No. 19, office of the Secretary, United States Department of Agriculture, published under authority of the act of March 3, 1903, and as recognized by the larger body of reputable producers, is as follows:

"Milk is the fresh, clean, lacteal secretion obtained by the complete milking of one or more healthy cows, properly fed and kept, excluding that obtained within fifteen days before and ten days after calving, and contains not less than eight and one-half (8.5) per cent of solids not fat, and not less than three and one-quarter (3.25) per cent of milk fat."

It seemed, therefore, that the sample in question was adulterated within the meaning of section 7 of the food and drugs act of June 30, 1906, in that it appeared to contain an excessive amount of water, thereby reducing its quality and strength. On December 28, 1907, the Secretary of Agriculture accorded the said Griebler a hearing, but as there was nothing disclosed at the hearing tending to show any fault or error in the analysis of the department, the Secretary, on April 30, 1908, reported the facts to the Attorney-General. These facts were duly referred to the United States attorney for the eastern district of Illinois, who filed an information against the said Griebler, with the result hereinbefore stated.

H. W. WILEY,
F. L. DUNLAP,
GEO. P. MCCABE,
Board of Food and Drug Inspection.

Approved:
JAMES WILSON,
Secretary of Agriculture.

WASHINGTON, D. C., *January 11, 1909.*

ADULTERATION OF MILK (WATER).

[N. J. 81.]

In accordance with the provisions of section 4 of the food and drugs act of June 30, 1906, and of regulation 6 of the rules and regulations for the enforcement of the act, notice is given that on April 6, 1909, in the district court of the United States for the eastern district of Kentucky, in a prosecution by the United States against Henry Groger for violation of section 2 of the aforesaid act in the shipment and delivery for shipment from Kentucky to Ohio of adulterated milk—that is to say, milk containing an excess of water—the defendant having entered a plea of guilty, the court imposed upon him a fine of $15 and costs.

The facts in the case were as follows:

On September 2, 1908, an inspector of the Department of Agriculture obtained samples from a consignment of milk shipped by Henry Groger from Richwood, Ky., to Cincinnati, Ohio. One of the samples was forthwith analyzed in the Bureau of Chemistry of the United States Department of Agriculture, and the following results obtained and stated:

Specific gravity	1.0208
Total solids (per cent)	10.24
Fat (per cent)	4.2
Nonfatty solids (per cent)	6.04

In the opinion of the Department of Agriculture, milk is the fresh, clean, lacteal secretion obtained by the complete milking of one or more healthy cows, properly fed and kept, excluding that obtained within fifteen days before and ten days after calving, and contains not less than eight and one-half (8.5) per cent of solids not fat, and not less than three and one-quarter (3.25) per cent of milk fat.

It was apparent that the milk was adulterated in violation of section 7 of the act in that it contained an excessive amount of water, thereby reducing its quality and strength. The Secretary of Agriculture on October 22, 1908, accorded the shipper an opportunity to show any fault or error in the findings of the analyst, and he having failed to do so, the facts were reported to the Attorney-General on January 28, 1909, and the case referred to the United States attorney for the eastern district of Kentucky, who filed an information against said defendant, with the result hereinbefore stated.

F. L. DUNLAP,
Geo. P. MCCABE,
Board of Food and Drug Inspection.

Approved:
JAMES WILSON,
Secretary of Agriculture.

WASHINGTON, D. C., *June 16, 1909.*

[F. & D. Nos. 37-c, 38-c, 42-c, 43-c, and 44-c. Issued March 17, 1910. United States Department of Agriculture, office of the Secretary.]

ADULTERATIONS OF MILK.

[Notice of judgment No. 214, Food and Drugs Act.]

In accordance with the provisions of section 4 of the food and drugs act of June 30, 1906, and of regulation 6 of the rules and regulations for the enforcement of the act, notice is given of judgments rendered in the police court of the District of Columbia, on the dates hereinafter mentioned, in the following cases involving violations of section 2 of the aforesaid act:

In United States *v.* Robert E. Kanode, of Gaithersburg, Md., the defendant, on November 23, 1909, was arraigned upon, and pleaded guilty to, an information charging him with the sale of milk in the District of Columbia which was adulterated in that butter fat, a valuable constituent thereof, had been abstracted therefrom; and the court imposed upon him a fine of $10.

In the United States *v.* David Stup, of Adamstown, Md., the defendant, on December 1, 1909, was arraigned upon, and pleaded guilty to, an information charging him with the sale of milk in the District of Columbia which was adulterated in that water had been mixed with it so as to lower and reduce its quality; and the court imposed upon him a fine of $15.

In United States *v.* Lyman T. Robinson, of Meetze, Va., the defendant, on January 20, 1910, pleaded guilty to an information charging him with the sale of milk in the District of Columbia which was adulterated in that water had been mixed with it so as to lower and reduce its quality, and was fined $15.

In United States *v.* Albert Mack, of Lewinsville, Va., the defendant, on January 20, 1910, was arraigned upon two informations charging him with sales of milk in the District of Columbia which was adulterated in that water had been mixed with it so as to lower and reduce its quality, and was fined $15 in each case.

In United States *v.* George R. Reeves, of Glencarlyn, Va., the defendant, on January 20, 1910, pleaded guilty to an information charging him with the sale of milk in the District of Columbia which was adulterated in that water had been mixed with it so as to lower and injuriously affect its quality, and was fined $15.

The facts on which the prosecutions were based were as follows:

An inspector of the health department of the District of Columbia, acting under authorization of the Secretary of Agriculture to Dr. William C. Woodward, health officer of said District, procured samples from milk sold and delivered at Union Station, Washington, D. C., by defendants in the above-mentioned cases, which were analyzed in the health department of the District of Columbia and found to be adulterated as above charged. All of said defendants were duly notified and given opportunities to be heard in regard to said adulterations, and it appearing that the act had been violated, the health officer reported the facts to the United States attorney for the District of Columbia, who filed informations against the above-named defendants, with the results hereinbefore stated.

JAMES WILSON,
Secretary of Agriculture.

WASHINGTON, D. C., *February 21, 1910.*

[F. & D. No. 40-C. Issued March 19, 1910. United States Department of Agriculture, Office of the Secretary.]

ADULTERATION OF MILK.

[Notice of Judgment No. 228, Food and Drugs Act.]

On or about September 10, 1909, William W. Soper, of Boyds, Md., sold and delivered at Union Station, Washington, D. C., a quantity of milk. Dr. William C. Woodward, health officer of the District of Columbia, acting by authority of the Secretary of Agriculture, caused a sample from the above delivery to be procured and analyzed. As the finding of the analyst and report made indicated that the article was adulterated within the meaning of the food and drugs act, the said William W. Soper was afforded an opportunity for hearing, and as it appeared after the hearing held that the above sale was made in violation of the said act, the said health officer reported the facts to the United States attorney for the District of Columbia.

In due course, a criminal information against the said William W. Soper was filed in the Police Court of the District of Columbia charging that the milk delivered and

sold as aforesaid was adulterated, for the reason that a valuable constituent, butter fat, had been abstracted therefrom.

On January 4, 1910, the defendant pleaded guilty to the information and was fined $10.

This notice is given pursuant to section 4 of the Food and Drugs Act of June 30, 1906.

JAMES WILSON,
Secretary of Agriculture.

WASHINGTON, D. C., *February 25, 1910.*

ADULTERATION OF MILK (FORMALDEHYDE).

[N. J. 8.]

In accordance with the provisions of section 4 of the Food and Drugs act of June 30, 1906, and of regulation 6 of the rules and regulations for the enforcement of the act, notice is given that on the 19th day of June, 1908, in the district court of the United States for the southern district of Illinois, southern division, in a criminal prosecution by the United States against Daniel Strassen for violation of section 2 of the aforesaid act in shipping and delivering for shipment into interstate commerce adulterated milk—that is to say, milk which had formaldehyde mixed with it—the said Daniel Strassen having entered a plea of guilty, judgment was rendered by the court in substance and form as follows:

In the district court of the United States for the southern district of Illinois, southern division.

Friday, June 19, A. D. 1908.

Present, the Honorable J. OTIS HUMPHREY, judge.

THE UNITED STATES *vs.* DANIEL STRASSEN. } Criminal information. Term No. 86. General No. 10976. Violation of Food and Drugs Act.

And now, on this 19th day of June, A. D. 1908, comes the United States, the plaintiff in this case, by W. A. Northcott, esq., United States attorney for the southern district of Illinois, and comes also the defendant, Daniel Strassen, in custody.

And the said defendant, being arraigned on the criminal information, for plea thereto says that he is guilty as therein charged, and he having nothing to say why sentence should not be pronounced against him, it is thereupon ordered by the court that sentence in this case be suspended.

The facts of the case were as follows:

On October 3, 1907, an inspector of the Department of Agriculture obtained, in St. Louis, Mo., samples of milk from a consignment of that article shipped from Fruit, Ill., by Daniel Strassen. One of the samples was forthwith subjected to analysis in the Bureau of Chemistry, Department of Agriculture. The result obtained showed the presence of formaldehyde. The milk in question was therefore adulterated in that it contained a deleterious and poisonous ingredient which rendered it injurious to health.

On January 15, 1908, the Secretary of Agriculture accorded Daniel Strassen a hearing. As there was nothing disclosed at this hearing tending to show any fault or error in the result of the analysis above stated, the facts were, on April 30, 1908, reported to the Attorney-General and by him to the United States attorney for the southern district of Illinois, who, on the 1st day of June, 1908, filed an information in the court aforesaid alleging the shipment and delivering for shipment, by the said defendant, from Fruit, in the State of Illinois, to St. Louis, in the State of Missouri, of adulterated milk, with the result set forth in the judgment hereinbefore given.

H. W. WILEY,
F. L. DUNLAP,
GEO. P. MCCABE,
Board of Food and Drug Inspection.

Approved:
W. L. MOORE,
Acting Secretary of Agriculture.

WASHINGTON, D. C., *July 15, 1908.*

ADULTERATION OF MILK (WATER AND FORMALDEHYDE).

[N. J. 9.]

In accordance with the provisions of section 4 of the food and drugs act of June 30, 1906, and of regulation 6 of the rules and regulations for the enforcement of the act, notice is given that on the 19th day of June, 1908, in the district court of the United States for the southern district of Illinois, southern division, in a criminal prosecution by the United States against Daniel Strassen for violation of section 2 of the aforesaid act, in shipping and delivering for shipment into interstate commerce adulterated milk—that is to say, milk that contained an excess of water and had formaldehyde mixed with it—the said Daniel Strassen having entered a plea of guilty a judgment was rendered by the court in substance and form as follows:

In the district court of the United States for the southern district of Illinois, southern division.

Friday, June 19th, A. D. 1908.

Present, the Honorable J. OTIS HUMPHREY, judge.

THE UNITED STATES *vs.* DANIEL STRASSEN. } Criminal information. Term No. 85. General No. 10975. Violation of food and drugs act.

And now on this 19th day of June, A. D. 1908, comes the United States, the plaintiff in this case, by W. A. Northcott, esq., United States attorney for the southern district of Illinois, and comes also the defendant, Daniel Strassen, in custody.

And the said defendant being arraigned on the criminal information herein, for plea thereto says that he is guilty as therein charged, and he having nothing to say why sentence should not be pronounced against him, it is therefore considered and adjudged by the court that the said defendant, Daniel Strassen, for the offense by him committed in manner and form as charged in the said criminal information and as by him confessed, do pay a fine to the United States in the sum of one hundred dollars, together with the costs of this prosecution, amounting to the sum of thirty-eight dollars and forty-eight cents, and that execution issue therefor.

The facts of the case were as follows:

On October 3, 1907, an inspector of the Department of Agriculture obtained, in St. Louis, Mo., samples of milk from a consignment of that article shipped from Fruit, Ill., By Daniel Strassen. One of the samples was forthwith subjected to analysis in the Bureau of Chemistry, Department of Agriculture, and the following result obtained and stated:

Fat (per cent)	4.2
Nonfatty solids (per cent)	8.15
Formaldehyde	Present.

Milk is defined in the "Standards of Purity for Food Products," promulgated under authority of law by the Secretary of Agriculture, as follows:

"Milk is the fresh, clean, lacteal secretion obtained from the complete milking of one or more healthy cows, properly fed and kept, excluding that obtained within fifteen days before and ten days after calving, and contains not less than eight and one-half (8.5) per cent of solids not fat, and not less than three and one-quarter (3.25) per cent of milk fat."

The milk in question was therefore adulterated within the meaning of section 7 of the act, in that it contained an excessive amount of water, thereby reducing its quality and strength, and in that it contained formaldehyde, a poisonous and deleterious ingredient, which rendered the milk injurious to health.

On January 15, 1908, the Secretary of Agriculture accorded Daniel Strassen a hearing. As there was nothing disclosed at this hearing tending to show any fault or error in the result of the analysis above stated, the facts were, on April 30, 1908, reported to the Attorney-General and by him to the United States attorney for the southern district of Illinois, who, on the 1st day of June, 1908, filed an information in the court aforesaid alleging the shipment and delivering for shipment by the said defendant from Fruit, in the State of Illinois, to St. Louis, in the State of Missouri, of adulterated milk, with the result set forth in the judgment hereinbefore given.

H. W. WILEY,
F. L. DUNLAP,
GEO. P. MCCABE,
Board of Food and Drug Inspection.

Approved:
W. L. MOORE,
Acting Secretary of Agriculture.

WASHINGTON, D. C., *July 15, 1908.*

[F. & D. No. 41. Issued March 19, 1910. United States Department of Agriculture, office of the Secretary.]

ADULTERATION OF MILK.

[Notice of judgment No. 229, Food and Drugs Act.]

On or about December 16, 1909, Charles A. Walter, of Doubs, Md., sold and delivered at Union Station, Washington, D. C., a quantity of milk. Dr. William C. Woodward, health officer of the District of Columbia, acting by authority of the Secretary of Agriculture, caused a sample from the above delivery to be procured and analyzed. As the finding of the analyst and report made indicated that the milk was adulterated within the meaning of the food and drugs act, the said Charles A. Walter was afforded an opportunity for hearing, and as it appeared after the hearing held that this sale was in violation of the said act, the said health officer reported the facts to the United States attorney for the District of Columbia.

In due course, a criminal information against the said Charles A. Walter was filed in the police court of the District of Columbia, charging that said milk was adulterated in that a valuable constituent, butter fat, had been abstracted therefrom.

On January 3, 1910, the defendant pleaded guilty to the information and was fined $15.

This notice is given pursuant to section 4 of the food and drugs act of June 30, 1906.

JAMES WILSON,
Secretary of Agriculture.

WASHINGTON, D. C., *February 25, 1910.*

[F. & D. Nos. 436 and 437. I. S. Nos. 12814-a, 12815-a, and 12898-a. Issued March 16, 1910. United States Department of Agriculture, office of the Secretary.]

ADULTERATION OF MILK.

[Notice of judgment No. 206, food and drugs act.]

In accordance with the provision section 4 of the food and drugs act of June 30, 1906, and of regulation 6 of the rules and regulations for the enforcement of the act, notice is given that on the 18th day of October, 1909, in the district court of the United States for the eastern district of Wisconsin, in prosecutions by the United States against the Wisconsin Butter and Cheese Company, a corporation of Elkhorn, Wis., for violations of section 2 of the aforesaid act in shipping and delivering for shipment from Wisconsin to Illinois adulterated milk, the said Wisconsin Butter and Cheese Company entered pleas of guilty and the court suspended sentence.

These cases were based upon samples of milk procured by the inspectors of the United States Department of Agriculture, on August 24, 1908, from the shipping cans after the milk had reached Chicago from the Wisconsin Butter and Cheese Company, Elkhorn, Wis., for delivery to Bendel or Bewdell Dairy Company, Chicago, Ill., and the Wm. Lowry Dairy Company, Chicago, Ill., respectively. The inspectors saw the said several shipments of milk delivered to the railroads at the point of shipment, identified each shipment with the consignor, and accompanied them to Chicago. The aforesaid samples were duly analyzed in the Bureau of Chemistry of the United States Department of Agriculture and it was found that they were adulterated in that cream, a valuable constituent thereof, had been abstracted.

It appearing from the aforesaid analyses that the milk was adulterated, the Secretary of Agriculture gave notice to the Bendel or Bewdell Dairy Company and the Wm. Lowry Dairy Company, the consignees of said product, and to the Wisconsin Butter and Cheese Company, the consignor of the same, and gave them an opportunity to be heard. The Wisconsin Butter and Cheese Company being solely responsible for said shipments and having failed to show any fault or error in the results of the said analyses, and it being determined that the milk was adulterated, the said Secretary on February 17, 1909, reported the facts and evidence to the Attorney-General, by whom they were referred to the United States attorney for the eastern district of Wisconsin, who filed informations against the aforesaid defendant, with the result hereinbefore stated.

JAMES WILSON,
Secretary of Agriculture.

WASHINGTON, D. C., *February 18, 1910.*

[S. No. 245. F. & D. No. 624. Issued March 19, 1910. United States Department of Agriculture, office of the Secretary.]

MISBRANDING OF CONDENSED MILK.

[Notice of judgment No. 223, food and drugs act.]

In accordance with the provisions of section 4 of the food and drugs act of June 30, 1906, and of regulation 6 of the rules and regulations for the enforcement of the act, notice is given of the judgment of the court in the case of the United States *v.* 200 Cases of Condensed Milk, a proceeding of libel under section 10 of the aforesaid act for seizure and condemnation of the said 200 cases of condensed milk, lately pending, and finally determined on June 23, 1909, in the district court of the United States for the eastern district of Louisiana by rendition of a decree of condemnation and forfeiture hereinafter fully set out.

On June 19, 1909, the United States attorney filed a libel in the district court of the United States for the eastern district of Louisiana praying seizure, condemnation, and forfeiture of the said condensed milk. To this libel Libby, McNeill & Libby, Ltd., Inc., appeared, set up its claim to the milk, filed its answer, and, together with the United States attorney, submitted the issue to the court upon an agreed statement of facts. The case having come on for final hearing, on June 23, 1909, the court rendered its decree of condemnation and forfeiture in substance and in form as follows:

UNITED STATES DISTRICT COURT, EASTERN DISTRICT OF LOUISIANA.

UNITED STATES
vs.
200 CASES OF CONDENSED MILK.

Now comes the United States of America, by W. J. Waguespack, Asst. United States attorney for the eastern district of Louisiana, and the claimants, Libby, McNeill & Libby, Ltd., Inc., through Saunders, Dufour & Dufour, its attorneys, claimants and owners of the condensed milk seized by the United States marshal, pursuant to the libel filed in the above entitled and numbered cause, and upon pleadings filed in open court.

It is ordered, adjudged, and decreed that the condensed milk be, and the same are, condemned as misbranded, but upon the payment of the costs of these proceedings by the claimants, and the giving of a bond in the sum of $1,000 by the said Libby, McNeill & Libby, Ltd., Inc., conditioned that the said condensed milk will not be disposed of by them contrary to the provisions of the food & drug act, approved June 30th, 1906, or the laws of any State, Territory, district, or insular possession.

It is ordered, that the said condensed milk be delivered to the claimants herein.

June 23, 1909.

(Signed) RUFUS E. FOSTER,
Judge.

The facts in the case were as follows:

On June 3, 1909, Libby, McNeill & Libby, Ltd., Inc., New Orleans, La., shipped from Morrison, Ill., to themselves at New Orleans, La., 200 cases each containing 12 cans of condensed milk. The cans contained in the shipping cases bore the following label: "Rubric Brand Condensed Milk, Emery Food Company, Chicago, U. S. A., packed at Morrison, Illinois, net weight 14 ounces. Guaranty serial No. 2829."

A sample was weighed in the Bureau of Chemistry of the United States Department of Agriculture and found to average a shortage of 20 per cent of the weight declared on the label. The article was therefore misbranded within the meaning of section 8 of the act in that it purported to state on the label its contents in terms of weight, which statement was incorrect.

Accordingly, on June 19, 1909, the Secretary of Agriculture notified the United States attorney for the eastern district of Louisiana that the aforesaid 200 cases of condensed milk were then in the possession of Libby, McNeill & Libby, Ltd., Inc., New Orleans, La., having been shipped as above stated, and that they were misbranded within the meaning of the act. On June 19, 1909, the United States attorney filed a libel in the district court of the United States for the eastern district of Louisiana praying seizure, condemnation, and forfeiture of the said condensed milk, with the result hereinbefore stated.

The said claimant, Libby, McNeill & Libby, Ltd., Inc., having complied with the terms of the aforesaid decree and section 10 of the food and drugs act of June 30, 1908, the said 200 cases of condensed milk were redelivered to it.

JAMES WILSON,
Secretary of Agriculture.

WASHINGTON, D. C., *February 23, 1910.*

[N. J. 88.]

ADULTERATION OF MILK (ADDED WATER).

In accordance with the provisions of section 4 of the food and drugs act of June 30, 1906, and of regulation 6 of the rules and regulations for the enforcement of the act, notice is given of the judgments of the court in the following cases:

United States *v.* Howard Griffith,
United States *v.* Patrick B. Holt,
United States *v.* Philip Hettenkemer,
United States *v.* George A. Wise,
United States *v.* John Allen,
United States *v.* Frank E. Altemus,
United States *v.* Albert Schapiro,
United States *v.* William W. Whitehead,
United States *v.* William A. Sanger,
United States *v.* Soul Berman,
United States *v.* Charles E. Vernon,
United States *v.* Charles Harbin,
United States *v.* Frank Mace,
United States *v.* Julia Poore,
United States *v.* Grover F. Jarboe, and
United States *v.* Blanche D. Siddall,

lately pending in the police court of the District of Columbia, for violation of section 2 of the aforesaid act in the offer for sale and the sale in the District of Columbia of milk which was adulterated within the meaning of section 7 of the act.

On November 24, 1908, the aforesaid defendant, Howard Griffith, having been arraigned on an information charging him with the sale and offer for sale of milk adulterated with water, entered a plea of guilty, and the court sentenced him to pay a fine of $25, and in default of payment to be committed to jail for sixty days.

On November 28, 1908, the aforesaid defendant, Patrick B. Holt, having been arraigned on an information charging him with the sale and offer for sale of milk adulterated with water, and having entered a plea of not guilty, and the trial of the issue having resulted in a judgment of guilty, the court sentenced him to pay a fine of $10, and in default of payment to be committed to jail for thirty days.

On November 28, 1908, the aforesaid defendant, Philip Hettenkemer, theretofore having been let to bail on his deposit of $10 collateral security for his appearance to answer an information charging him with the sale and offer for sale of milk adulterated with water, and the case having come on for hearing on the appointed day, and the said defendant having failed to appear, the court adjudged him in default and ordered the aforesaid collateral security forfeited.

On December 1, 1908, the aforesaid defendant, George A. Wise, having been arraigned on an information charging him with the sale and offer for sale of milk adulterated with water, entered a plea of guilty, and the court sentenced him to pay a fine of $20, and in default of payment to be committed to jail for sixty days.

On December 2, 1908, the aforesaid defendant, John Allen, having been arraigned on an information charging him with the sale and offer for sale of milk adulterated with water, entered a plea of guilty, and the court sentenced him to pay a fine of $10, and in default to be committed to jail for thirty days. Sentence was suspended on account of ill health of defendant.

On December 3, 1908, the aforesaid defendant, Frank E. Altemus, theretofore having been let to bail on his deposit of $20 collateral security for his appearance to answer an information charging him with the sale and offer for sale of milk adulterated with water, and the case having come on for hearing on the appointed day, and the defendant having failed to appear, the court adjudged him in default and ordered the aforesaid collateral security forfeited.

On December 8, 1908, the aforesaid defendant, Albert Schapiro, having been arraigned on an information charging him with the sale and offer for sale of milk adulterated with water, and having entered a plea of not guilty, and the trial of the issue having resulted in a judgment of guilty, the court sentenced him to pay a fine of $20.

On December 29, 1908, the aforesaid defendant, William W. Whitehead, theretofore having been let to bail on his deposit of $5 collateral security for his appearance to answer an information charging him with the sale and offer for sale of milk adulterated with water, and the case having come on for hearing on the appointed day, and the said defendant having failed to appear, the court adjudged him in default and ordered the aforesaid collateral security forfeited.

On December 29, 1908, the aforesaid defendant, William A. Sanger, theretofore having been let to bail on his deposit of $5 collateral security for his appearance to answer an information charging him with the sale and offer for sale of milk adulterated with water, and the case having come on for hearing on the appointed day, and the said defendant having failed to appear, the court adjudged him in default and ordered the aforesaid collateral security forfeited.

On December 29, 1908, the aforesaid defendant, Soul Berman, theretofore having been let to bail on his deposit of $5 collateral security for his appearance to answer an information charging him with the sale and offer for sale of milk adulterated with water, and the case having come on for hearing on the appointed day, and the said defendant having failed to appear, the court adjudged him in default and ordered the aforesaid collateral security forfeited.

On December 29, 1908, the aforesaid defendant, Charles E. Vernon, theretofore having been let to bail on his deposit of $5 collateral security for his appearance to answer an information charging him with the sale and offer for sale of milk adulterated with water, and the case having come on for hearing on the appointed day, and the said defendant having failed to appear, the court adjudged him in default and ordered the aforesaid collateral security forfeited.

On December 29, 1908, the aforesaid defendant, Charles Harbin, theretofore having been let to bail on his deposit of $5 collateral security for his appearance to answer an information charging him with the sale and offer for sale of milk adulterated with water, and the case having come on for hearing on the appointed day, and the said defendant having failed to appear, the court adjudged him in default and ordered the aforesaid collateral security forfeited.

On December 29, 1908, the aforesaid defendant, Frank Mace, theretofore having been let to bail on his deposit of $5 collateral security for his appearance to answer an information charging him with the sale and offer for sale of milk adulterated with water, and the case having come on for hearing on the appointed day, and the said defendant having failed to appear, the court adjudged him in default and ordered the aforesaid collateral security forfeited.

On December 30, 1908, the aforesaid defendant, Julia Poore, having been arraigned on an information charging her with the sale and offer for sale of milk adulterated with water, entered a plea of guilty, and the court sentenced her to pay a fine of $25.

On January 2, 1909, the aforesaid defendant, Grover F. Jarboe, theretofore having been let to bail on his deposit of $5 collateral security for his appearance to answer an information charging him with the sale and offer for sale of milk adulterated with water, and the case having come on for hearing on the appointed day, and the said defendant having failed to appear, the court adjudged him in default and ordered the aforesaid collateral security forfeited.

On January 6, 1909, the aforesaid defendant, Blanche D. Siddall, theretofore having been let to bail on her deposit of $5 collateral security for her appearance to answer an information charging her with the sale and offer for sale of milk adulterated with water, and the case having come on for hearing on the appointed day, and the said defendant having failed to appear, the court adjudged her in default and ordered the aforesaid collateral security forfeited.

The facts in the cases were as follows:

During the months of August, September, October, and November, 1908, Dr. William C. Woodward, health officer of the District of Columbia, acting by authority of the Secretary of Agriculture of the United States, in pursuance of regulation 3 of the rules and regulations for the enforcement of the food and drugs act of June 30, 1906, caused to be purchased samples of milk from the following-named persons and firms, all conducting business in Washington, D. C.:

C. L. Bailey, 237 G street NW.; P. B. Holt & Bro., 17 Fourth street NE.; Philip Hettenkemer, 301 Fourth street NE.; Geo. A. Wise, 3310 P street NW.; John Allen, 1744 Eighth street NW.; Frank E. Altemus, Fourteenth and W streets NW.; Albert Schapiro, 529 Virginia avenue SE.; Whitehead & Reed, Twelfth and D streets NW.; William A. Sanger, 458 Louisiana avenue NW.; Soul Berman, 521 Twenty-third street NW.; Charles E. Vernon & Co., 707 H street NE.; Charles Harbin, Ninth and F streets NE.; Frank Mace, 700 F street NE.; Julia Poore; Richardson & Jarboe, 407 Thirteen-and-a-half street NW.; and Blanche Siddall, 611 D street NW. The said several samples were promptly submitted to analyses, and it was found that they were adulterated within the meaning of section 7 of the food and drugs act of June 30, 1906, in that water had been mixed with the milk so as to reduce and lower its quality and strength. Opportunity to be heard was duly accorded the said several persons and firms, under the provisions of section 4 of the said food and drugs act. At the hearing accorded C. L. Bailey, he produced the guaranty of Griffith & Griffith, dealers from whom he purchased the milk, and proceedings were therefore discontinued as

to him, but continued against said Griffith & Griffith. No evidence having been produced by the said several persons and firms to show any fault or error in the results of the aforesaid analyses of the milk, the facts were duly reported to the United States attorney for the District of Columbia, who forthwith filed informations against the said persons and a partner of the said firms, with the results hereinbefore stated.

H. W. WILEY,
F. L. DUNLAP,
GEO. P. MCCABE,
Board of Food and Drug Inspection.

Approved:
JAMES WILSON,
Secretary of Agriculture,
WASHINGTON, D. C., *June 28, 1909.*

ADULTERATION OF EGGS (PRESENCE OF PUTRID AND DECOMPOSED ANIMAL MATTER).

[N. J. 103.]

In accordance with the provisions of section 4 of the food and drugs act of June 30, 1906, and of regulation 6 of the rules and regulations for the enforcement of the act, notice is given of the judgment of the court in the case of The United States *v.* Twenty-five packages, each containing 30 dozen eggs, a proceeding for libel for seizure and condemnation of said eggs under section 10 of the aforesaid act and in the case of The United States *v.* Samuel Cohen, a prosecution under section 2 of the act, for shipping and delivering said eggs for shipment, lately pending in the district court of the United States for the eastern district of Pennsylvania. The eggs were adulterated within the meaning of section 7 of the act in that they consisted in whole or in part of putrid and decomposed animal matter, rendering them unfit for human food. Seizure of the eggs having been effected under libel filed therefor, and this case coming on for hearing on December 22, 1908, in pursuance of notice to all parties interested, and after full testimony for the United States, no claimant appearing, the court rendered its decree, adjudging the eggs adulterated and ordering their destruction, in form and substance as follows:

IN THE DISTRICT COURT OF THE UNITED STATES FOR THE EASTERN DISTRICT OF PENNSYLVANIA.

THE UNITED STATES OF AMERICA *vs.* TWENTY-FIVE PACKAGES EACH CONTAINING Thirty Dozen Eggs.	Libel for condemnation No. 8 of 1908.

To the honorable the judges of the district court of the United States for the eastern district of Pennsylvania:

On motion of J. Whitaker Thompson, esq., attorney for the United States in and for the eastern district of Pennsylvania, and attorney for the libelant herein, and it appearing to the court that upon the libel filed herein on the 22nd day of December, A. D. 1908, and under the process issued thereunder and pursuant thereto, the marshal for the eastern district of Pennsylvania has seized twenty-five packages, each containing thirty dozens of eggs, the said twenty-five packages, each containing thirty dozens of eggs, having been in the possession of the Pennsylvania Railroad Company, at, to wit, its freight depot, located at Delaware avenue and Walnut street, in the city of Philadelphia, and district aforesaid, and the said twenty-five packages, each containing thirty dozens of eggs, having been theretofore, on, to wit, the 22nd day of December, A. D. 1908, deposited with the said Pennsylvania Railroad Company, for transportation from the State of Pennsylvania to the State of New York by Louis Lazar as consignor, and consigned to Charles Lazar, New York City, New York, consignee, and now being stored in the custody of the said marshal;

And it further appearing by the sworn report of the analyst filed in this case, of the examinations of samples of the said eggs, as is provided by the said act of Congress of June 30th, 1906, that the said eggs are adulterated and of a deleterious character, within the meaning of the said act of Congress;

And it further appearing that due and legal notice and proclamation were given to all persons having any claim, right, or interest herein to appear on the 15th day of January, A. D. 1909, and answer the exigencies of the said libel; and on the said

return day the said Louis Lazar, consignor, and the said Charles Lazar, consignee, as aforesaid, having defaulted in filing an answer to the said libel, the said Pennsylvania Railroad Company having filed an answer admitting the possession of the said twenty-five packages, each containing thirty dozens of eggs, for transportation as aforesaid, and no party having appeared as claimant or owner of the said twenty-five packages, each containing thirty dozens of eggs, and no objection having been signified to the court, it is, on this —— day of January, A. D. 1909:

Ordered, adjudged, and decreed that the said twenty-five packages, each containing thirty dozens of eggs, as aforesaid, be, and they are hereby, declared to be adulterated in violation of the act of June 30th, 1906, as charged in said libel.

And it is further ordered that the said twenty-five packages, each containing thirty dozens of eggs as aforesaid, be, and they are hereby, condemned and ordered to be destroyed, as prayed for in the said libel, and provided for in the act of Congress of June 30th, 1906; and it is further ordered and decreed, that the same be destroyed by the marshal and that he make report of such destruction to the court.

By the court.

MCPHERSON,
United States District Judge.

Attest:
H. W. CRAIG,
Clerk Dist. Court United States, Eastern Dist. Pa.

Subsequently it developed that one Samuel Cohen, of Philadelphia, Pa., was the consignor of these eggs, whereupon the facts were presented to the grand jury and indictment returned against said Cohen for violation of section 2 of the act, in shipping and delivering for shipment the aforesaid eggs from Pennsylvania to New York; defendant was arraigned thereon and on March 10, 1909, entered his plea of guilty, upon which the court rendered its judgment and passed sentence as follows:

"And now the defendant being arraigned says he is guilty in manner and form as he stands indicted, and now all and singular the premises being seen and by the court here fully understood, it is considered and adjudged that the defendant, Samuel Cohen, pay to the United States a fine of $50.00, that he pay the cost of the prosecution, and stand committed until judgment be fully complied with. The defendant this day pays into the registry of the court the fine of $50.00, and the cost, $51.68, and is therefore discharged from custody."

The facts in the case were as follows:

On or about December 22, 1908, an inspector of the dairy and food division of the Pennsylvania department of agriculture, acting under authorization from the Secretary of the United States Department of Agriculture to James Foust, dairy and food commissioner of said State, in accordance with regulation 3 of the rules and regulations for the enforcement of the food and drugs act of June 30, 1906, found in the possession of the Pennsylvania Railroad Company at Philadelphia, Pa., twenty-five cases of eggs, which had been delivered for shipment from that city to Louis Lazar, New York, N. Y. Samples of the eggs were procured and subjected to analysis and found to be decomposed and unfit for human consumption.

The facts were reported to the United States attorney for the eastern district of Pennsylvania, by whom libel for seizure under section 10 of the act was promptly filed and prosecution instituted under section 2, as above stated, with the result hereinbefore set out.

H. W. WILEY,
F. L. DUNLAP,
GEO. P. MCCABE,
Board of Food and Drug Inspection.

Approved:
JAMES WILSON,
Secretary of Agriculture.

WASHINGTON, D. C., *November 1, 1909.*

[Notice of judgment No. 22. Issued November 12, 1908. United States Department of Agriculture, office of the Secretary, board of food and drug inspection.]

MISBRANDING OF EGGS.

[Notice of judgment No. 22, food and drugs act.]

In accordance with the provisions of section 4 of the food and drugs act of June 30, 1906, and of regulation 6 of the rules and regulations for the enforcement of the act, notice is given that on the 3d day of June, 1908, in the police court of the District of Columbia, in a criminal prosecution by the United States against Golden & Co., a corporation, for violation of section 2 of the aforesaid act, in the sale and offer for sale in said District of misbranded eggs—that is to say, eggs contained in cases to which were attached labels bearing the statement "Strictly Fresh Eggs"—the said Golden & Co., defendant, entered a plea of guilty, whereupon the court imposed upon it a fine of $75.

The facts in the case were as follows:

On December 19, 1907, an inspector of the Department of Agriculture purchased from the F. Rogerson Company, 920 Louisiana avenue, Washington, D. C., samples of eggs which were contained in crates upon the ends of which were pasted labels bearing the statement "Strictly Fresh Eggs from Golden & Co., 922-928 Louisiana avenue, Washington, D. C." The eggs had been purchased on said date by the Rogerson Company from Golden & Co.

The eggs were forthwith examined in the Bureau of Chemistry of said Department and the result disclosed that they were not fresh; that the albumen in some of the eggs clung to the shell membrane; that the size of the air chamber varied from one-fifth to almost one-half the size of the egg, showing a large amount of evaporation; that minute rosette crystals were in the albumen of each egg, and that large rosette crystals were in the yolk of each egg. The eggs were therefore misbranded within the meaning of section 8 of the act.

On January 28, 1908, the Secretary of Agriculture accorded the parties a hearing. As nothing was disclosed at this hearing tending to show any fault or error in the result of the aforesaid examination, the facts were duly reported to the Attorney-General and by him to the United States attorney for the District of Columbia, who, on the 29th day of May, 1908, filed an information in the police court of said District alleging the sale of misbranded eggs by said Golden & Co. to the said Rogerson Company, with the result hereinbefore stated.

H. W. WILEY,
F. L. DUNLAP,
GEO. P. MCCABE,
Board of Food and Drug Inspection.

Approved:
W. L. MOORE, *Acting Secretary of Agriculture.*
WASHINGTON, D. C., *July 15, 1908.*

[N. J. 7.]

In accordance with the provisions of section 4 of the food and drugs act of June 30, 1906, and of regulation 6 of the rules and regulations for the enforcement of the act, notice is given that on the 3d day of June, 1908, in the police court of the District of Columbia, in a criminal prosecution by the United States against F. Rogerson Company, a corporation, for violation of section 2 of the aforesaid act, in the sale and offer for sale in said District of misbranded eggs, that is to say, eggs contained in cases labeled "Fresh Eggs," the said Rogerson Company, defendant, entered a plea of guilty, whereupon the court imposed upon it a fine of $75.

The facts in the case were as follows:

On December 19, 1907, an inspector of the Department of Agriculture purchased from F. Rogerson Company, 920 Louisiana avenue, Washington, D. C., three dozen eggs, each dozen being contained in pasteboard boxes upon which was printed "Fresh Eggs." The eggs were forthwith examined in the Bureau of Chemistry of said Department, and the result disclosed that they were not fresh; that the albumen in some of the eggs clung to the shell membrane; that the size of the air chambers varied to the maximum of one-third of the size of the egg, showing a large amount of evaporation; that minute rosette crystals were present in the albumen of each egg, and that large rosette crystals were found in the yolk of each egg. The eggs were therefore misbranded within the meaning of section 8 of the act.

On December 29, 1908, the aforesaid defendant, William A. Sanger, theretofore having been let to bail on his deposit of $5 collateral security for his appearance to answer an information charging him with the sale and offer for sale of milk adulterated with water, and the case having come on for hearing on the appointed day, and the said defendant having failed to appear, the court adjudged him in default and ordered the aforesaid collateral security forfeited.

On December 29, 1908, the aforesaid defendant, Soul Berman, theretofore having been let to bail on his deposit of $5 collateral security for his appearance to answer an information charging him with the sale and offer for sale of milk adulterated with water, and the case having come on for hearing on the appointed day, and the said defendant having failed to appear, the court adjudged him in default and ordered the aforesaid collateral security forfeited.

On December 29, 1908, the aforesaid defendant, Charles E. Vernon, theretofore having been let to bail on his deposit of $5 collateral security for his appearance to answer an information charging him with the sale and offer for sale of milk adulterated with water, and the case having come on for hearing on the appointed day, and the said defendant having failed to appear, the court adjudged him in default and ordered the aforesaid collateral security forfeited.

On December 29, 1908, the aforesaid defendant, Charles Harbin, theretofore having been let to bail on his deposit of $5 collateral security for his appearance to answer an information charging him with the sale and offer for sale of milk adulterated with water, and the case having come on for hearing on the appointed day, and the said defendant having failed to appear, the court adjudged him in default and ordered the aforesaid collateral security forfeited.

On December 29, 1908, the aforesaid defendant, Frank Mace, theretofore having been let to bail on his deposit of $5 collateral security for his appearance to answer an information charging him with the sale and offer for sale of milk adulterated with water, and the case having come on for hearing on the appointed day, and the said defendant having failed to appear, the court adjudged him in default and ordered the aforesaid collateral security forfeited.

On December 30, 1908, the aforesaid defendant, Julia Poore, having been arraigned on an information charging her with the sale and offer for sale of milk adulterated with water, entered a plea of guilty, and the court sentenced her to pay a fine of $25.

On January 2, 1909, the aforesaid defendant, Grover F. Jarboe, theretofore having been let to bail on his deposit of $5 collateral security for his appearance to answer an information charging him with the sale and offer for sale of milk adulterated with water, and the case having come on for hearing on the appointed day, and the said defendant having failed to appear, the court adjudged him in default and ordered the aforesaid collateral security forfeited.

On January 6, 1909, the aforesaid defendant, Blanche D. Siddall, theretofore having been let to bail on her deposit of $5 collateral security for her appearance to answer an information charging her with the sale and offer for sale of milk adulterated with water, and the case having come on for hearing on the appointed day, and the said defendant having failed to appear, the court adjudged her in default and ordered the aforesaid collateral security forfeited.

The facts in the cases were as follows:

During the months of August, September, October, and November, 1908, Dr. William C. Woodward, health officer of the District of Columbia, acting by authority of the Secretary of Agriculture of the United States, in pursuance of regulation 3 of the rules and regulations for the enforcement of the food and drugs act of June 30, 1906, caused to be purchased samples of milk from the following-named persons and firms, all conducting business in Washington, D. C.:

C. L. Bailey, 237 G street NW.; P. B. Holt & Bro., 17 Fourth street NE.; Philip Hettenkemer, 301 Fourth street NE.; Geo. A. Wise, 3310 P street NW.; John Allen, 1744 Eighth street NW.; Frank E. Altemus, Fourteenth and W streets NW.; Albert Schapiro, 529 Virginia avenue SE.; Whitehead & Reed, Twelfth and D streets NW.; William A. Sanger, 458 Louisiana avenue NW.; Soul Berman, 521 Twenty-third street NW.; Charles E. Vernon & Co., 707 H street NE.; Charles Harbin, Ninth and F streets NE.; Frank Mace, 700 F street NE.; Julia Poore; Richardson & Jarboe, 407 Thirteen-and-a-half street NW.; and Blanche Siddall, 611 D street NW. The said several samples were promptly submitted to analyses, and it was found that they were adulterated within the meaning of section 7 of the food and drugs act of June 30, 1906, in that water had been mixed with the milk so as to reduce and lower its quality and strength. Opportunity to be heard was duly accorded the said several persons and firms, under the provisions of section 4 of the said food and drugs act. At the hearing accorded C. L. Bailey, he produced the guaranty of Griffith & Griffith, dealers from whom he purchased the milk, and proceedings were therefore discontinued as

to him, but continued against said Griffith & Griffith. No evidence having been produced by the said several persons and firms to show any fault or error in the results of the aforesaid analyses of the milk, the facts were duly reported to the United States attorney for the District of Columbia, who forthwith filed informations against the said persons and a partner of the said firms, with the results hereinbefore stated.

H. W. WILEY,
F. L. DUNLAP,
GEO. P. MCCABE,
Board of Food and Drug Inspection.

Approved:
JAMES WILSON,
Secretary of Agriculture,
WASHINGTON, D. C., *June 28, 1909.*

ADULTERATION OF EGGS (PRESENCE OF PUTRID AND DECOMPOSED ANIMAL MATTER).

[N. J. 103.]

In accordance with the provisions of section 4 of the food and drugs act of June 30, 1906, and of regulation 6 of the rules and regulations for the enforcement of the act, notice is given of the judgment of the court in the case of The United States *v.* Twenty-five packages, each containing 30 dozen eggs, a proceeding for libel for seizure and condemnation of said eggs under section 10 of the aforesaid act and in the case of The United States *v.* Samuel Cohen, a prosecution under section 2 of the act, for shipping and delivering said eggs for shipment, lately pending in the district court of the United States for the eastern district of Pennsylvania. The eggs were adulterated within the meaning of section 7 of the act in that they consisted in whole or in part of putrid and decomposed animal matter, rendering them unfit for human food. Seizure of the eggs having been effected under libel filed therefor, and this case coming on for hearing on December 22, 1908, in pursuance of notice to all parties interested, and after full testimony for the United States, no claimant appearing, the court rendered its decree, adjudging the eggs adulterated and ordering their destruction, in form and substance as follows:

IN THE DISTRICT COURT OF THE UNITED STATES FOR THE EASTERN DISTRICT OF PENNSYLVANIA.

THE UNITED STATES OF AMERICA *vs.* TWENTY-FIVE PACKAGES EACH CONTAINING Thirty Dozen Eggs.	Libel for condemnation No. 8 of 1908.

To the honorable the judges of the district court of the United States for the eastern district of Pennsylvania:

On motion of J. Whitaker Thompson, esq., attorney for the United States in and for the eastern district of Pennsylvania, and attorney for the libelant herein, and it appearing to the court that upon the libel filed herein on the 22nd day of December, A. D. 1908, and under the process issued thereunder and pursuant thereto, the marshal for the eastern district of Pennsylvania has seized twenty-five packages, each containing thirty dozens of eggs, the said twenty-five packages, each containing thirty dozens of eggs, having been in the possession of the Pennsylvania Railroad Company, at, to wit, its freight depot, located at Delaware avenue and Walnut street, in the city of Philadelphia, and district aforesaid, and the said twenty-five packages, each containing thirty dozens of eggs, having been theretofore, on, to wit, the 22nd day of December, A. D. 1908, deposited with the said Pennsylvania Railroad Company, for transportation from the State of Pennsylvania to the State of New York by Louis Lazar as consignor, and consigned to Charles Lazar, New York City, New York, consignee, and now being stored in the custody of the said marshal;

And it further appearing by the sworn report of the analyst filed in this case, of the examinations of samples of the said eggs, as is provided by the said act of Congress of June 30th, 1906, that the said eggs are adulterated and of a deleterious character, within the meaning of the said act of Congress;

And it further appearing that due and legal notice and proclamation were given to all persons having any claim, right, or interest herein to appear on the 15th day of January, A. D. 1909, and answer the exigencies of the said libel; and on the said

return day the said Louis Lazar, consignor, and the said Charles Lazar, consignee, as aforesaid, having defaulted in filing an answer to the said libel, the said Pennsylvania Railroad Company having filed an answer admitting the possession of the said twenty-five packages, each containing thirty dozens of eggs, for transportation as aforesaid, and no party having appeared as claimant or owner of the said twenty-five packages, each containing thirty dozens of eggs, and no objection having been signified to the court, it is, on this —— day of January, A. D. 1909:

Ordered, adjudged, and decreed that the said twenty-five packages, each containing thirty dozens of eggs, as aforesaid, be, and they are hereby, declared to be adulterated in violation of the act of June 30th, 1906, as charged in said libel.

And it is further ordered that the said twenty-five packages, each containing thirty dozens of eggs as aforesaid, be, and they are hereby, condemned and ordered to be destroyed, as prayed for in the said libel, and provided for in the act of Congress of June 30th, 1906; and it is further ordered and decreed, that the same be destroyed by the marshal and that he make report of such destruction to the court.

By the court.

McPherson,
United States District Judge.

Attest:
H. W. Craig,
Clerk Dist. Court United States, Eastern Dist. Pa.

Subsequently it developed that one Samuel Cohen, of Philadelphia, Pa., was the consignor of these eggs, whereupon the facts were presented to the grand jury and indictment returned against said Cohen for violation of section 2 of the act, in shipping and delivering for shipment the aforesaid eggs from Pennsylvania to New York; defendant was arraigned thereon and on March 10, 1909, entered his plea of guilty, upon which the court rendered its judgment and passed sentence as follows:

"And now the defendant being arraigned says he is guilty in manner and form as he stands indicted, and now all and singular the premises being seen and by the court here fully understood, it is considered and adjudged that the defendant, Samuel Cohen, pay to the United States a fine of $50.00, that he pay the cost of the prosecution, and stand committed until judgment be fully complied with. The defendant this day pays into the registry of the court the fine of $50.00, and the cost, $51.68, and is therefore discharged from custody."

The facts in the case were as follows:

On or about December 22, 1908, an inspector of the dairy and food division of the Pennsylvania department of agriculture, acting under authorization from the Secretary of the United States Department of Agriculture to James Foust, dairy and food commissioner of said State, in accordance with regulation 3 of the rules and regulations for the enforcement of the food and drugs act of June 30, 1906, found in the possession of the Pennsylvania Railroad Company at Philadelphia, Pa., twenty-five cases of eggs, which had been delivered for shipment from that city to Louis Lazar, New York, N. Y. Samples of the eggs were procured and subjected to analysis and found to be decomposed and unfit for human consumption.

The facts were reported to the United States attorney for the eastern district of Pennsylvania, by whom libel for seizure under section 10 of the act was promptly filed and prosecution instituted under section 2, as above stated, with the result hereinbefore set out.

H. W. Wiley,
F. L. Dunlap,
Geo. P. McCabe,
Board of Food and Drug Inspection.

Approved:
James Wilson,
Secretary of Agriculture.

Washington, D. C., *November 1, 1909.*

[Notice of judgment No. 22. Issued November 12, 1908. United States Department of Agriculture, office of the Secretary, board of food and drug inspection.]

MISBRANDING OF EGGS.

[Notice of judgment No. 22, food and drugs act.]

In accordance with the provisions of section 4 of the food and drugs act of June 30, 1906, and of regulation 6 of the rules and regulations for the enforcement of the act, notice is given that on the 3d day of June, 1908, in the police court of the District of Columbia, in a criminal prosecution by the United States against Golden & Co., a corporation, for violation of section 2 of the aforesaid act, in the sale and offer for sale in said District of misbranded eggs—that is to say, eggs contained in cases to which were attached labels bearing the statement "Strictly Fresh Eggs"—the said Golden & Co., defendant, entered a plea of guilty, whereupon the court imposed upon it a fine of $75.

The facts in the case were as follows:

On December 19, 1907, an inspector of the Department of Agriculture purchased from the F. Rogerson Company, 920 Louisiana avenue, Washington, D. C., samples of eggs which were contained in crates upon the ends of which were pasted labels bearing the statement "Strictly Fresh Eggs from Golden & Co., 922-928 Louisiana avenue, Washington, D. C." The eggs had been purchased on said date by the Rogerson Company from Golden & Co.

The eggs were forthwith examined in the Bureau of Chemistry of said Department and the result disclosed that they were not fresh; that the albumen in some of the eggs clung to the shell membrane; that the size of the air chamber varied from one-fifth to almost one-half the size of the egg, showing a large amount of evaporation; that minute rosette crystals were in the albumen of each egg, and that large rosette crystals were in the yolk of each egg. The eggs were therefore misbranded within the meaning of section 8 of the act.

On January 28, 1908, the Secretary of Agriculture accorded the parties a hearing. As nothing was disclosed at this hearing tending to show any fault or error in the result of the aforesaid examination, the facts were duly reported to the Attorney-General and by him to the United States attorney for the District of Columbia, who, on the 29th day of May, 1908, filed an information in the police court of said District alleging the sale of misbranded eggs by said Golden & Co. to the said Rogerson Company, with the result hereinbefore stated.

H. W. WILEY,
F. L. DUNLAP,
GEO. P. MCCABE,
Board of Food and Drug Inspection.

Approved:
W. L. MOORE, *Acting Secretary of Agriculture.*
WASHINGTON, D. C., *July 15, 1908.*

[N. J. 7.]

In accordance with the provisions of section 4 of the food and drugs act of June 30, 1906, and of regulation 6 of the rules and regulations for the enforcement of the act, notice is given that on the 3d day of June, 1908, in the police court of the District of Columbia, in a criminal prosecution by the United States against F. Rogerson Company, a corporation, for violation of section 2 of the aforesaid act, in the sale and offer for sale in said District of misbranded eggs, that is to say, eggs contained in cases labeled "Fresh Eggs," the said Rogerson Company, defendant, entered a plea of guilty, whereupon the court imposed upon it a fine of $75.

The facts in the case were as follows:

On December 19, 1907, an inspector of the Department of Agriculture purchased from F. Rogerson Company, 920 Louisiana avenue, Washington, D. C., three dozen eggs, each dozen being contained in pasteboard boxes upon which was printed "Fresh Eggs." The eggs were forthwith examined in the Bureau of Chemistry of said Department, and the result disclosed that they were not fresh; that the albumen in some of the eggs clung to the shell membrane; that the size of the air chambers varied to the maximum of one-third of the size of the egg, showing a large amount of evaporation; that minute rosette crystals were present in the albumen of each egg, and that large rosette crystals were found in the yolk of each egg. The eggs were therefore misbranded within the meaning of section 8 of the act.

On January 28, 1908, the Secretary of Agriculture accorded F. Rogerson Company a hearing. As there was nothing disclosed at this hearing tending to show any fault or error in the result of the aforesaid examination, the facts were duly reported to the Attorney-General and by him to the United States attorney for the District of Columbia, who, on the 29th day of May, 1908, filed an information in the police court of said District alleging the sale of misbranded eggs by said F. Rogerson Company, with the result hereinbefore stated.

H. W. WILEY,
F. L. DUNLAP,
GEO. P. MCCABE,
Board of Food and Drug Inspection.

Approved:
W. L. MOORE, *Acting Secretary of Agriculture.*

WASHINGTON, D. C., *July 15, 1908.*

ADULTERATION OF EGGS (FILTHY, DECOMPOSED ANIMAL SUBSTANCE).

[N. J. 46.]

In accordance with the provisions of section 4 of the food and drugs act of June 30, 1906, and of regulation 6 of the rules and regulations for the enforcement of the act, notice is given that on the 25th day of November, 1908, in the district court of the United States for the eastern district of Michigan, in the proceeding of libel for condemnation of 276 tubs of adulterated eggs—that is to say, eggs which had been removed from their shells and frozen into a solid mass and consisting in part of a filthy, decomposed, and putrid animal substance unfit for food—wherein the United States was libelant and Spencer & Howes, a corporation, was claimant, the cause having come on for hearing and the said claimant having admitted the allegations of the libel, decrees of forfeiture and condemnation and redelivery to claimant, under the terms of its bond filed in accordance with section 10 of the act were rendered, in substance and in form as follows:

UNITED STATES OF AMERICA—THE DISTRICT COURT OF THE UNITED STATES FOR THE EASTERN DISTRICT OF MICHIGAN—SOUTHERN DIVISION.

UNITED STATES OF AMERICA
vs.
276 TUBS "EGGS." } No. 5211.

Spencer and Howes, a corporation organized and doing business under the laws of the State of Michigan, of the city of Detroit, Michigan, by William C. Manchester, their proctor, come now into court and acknowledge that the above entitled eggs are composed in whole and in part of a filthy, decomposed, and putrid animal substance as set forth in the libel filed in said cause, and consent that the same may be condemned and forfeited to the United States, under the provisions of the act of Congress of June 30, 1906, entitled "An act for preventing the manufacture, sale, or transportation of adulterated or misbranded or poisonous or deleterious foods, drugs, medicines, and liquors, and for regulating traffic therein, and for other purposes," subject to the right of said claimants to give bond therefor and obtain delivery thereof upon the terms and conditions of section 10 of the above entitled act of Congress.

Now, therefore, it is hereby ordered, adjudged, and decreed that the said eggs be, and the same are hereby, condemned and forfeited to the United States as being filthy and decomposed eggs, animal substance, and as being unfit and improper for use as foods, within the provisions of the aforesaid act of Congress.

HENRY H. SWAN, *District Judge.*

NOVEMBER 25, A. D. 1908.

THE DISTRICT COURT OF THE UNITED STATES FOR THE EASTERN DISTRICT OF MICHIGAN—SOUTHERN DIVISION.

UNITED STATES OF AMERICA
vs.
276 TUBS "EGGS." } No. 5221.

Whereas a decree has been entered in the above-entitled cause condemning and forfeiting the above-entitled eggs to the United States subject to the right of said claimant, Spencer and Howes, to give bond therefor and obtain delivery thereof upon the terms and conditions of section 10 of the act of Congress of June 30, 1906, entitled "An act for preventing the manufacture, sale, or transportation of adulterated or misbranded or poisonous or deleterious foods, drugs, medicines, and liquors, and for regulating traffic therein, and for other purposes;"

And whereas the said claimant has paid the costs of the said libel proceedings in the above-entitled cause, and has executed a bond in the sum of five hundred ($500.00) dollars, to the effect that said eggs shall not be sold or otherwise disposed of contrary to the provisions of said section 10 of the aforesaid act of Congress, or contrary to the laws of any State, Territory, District, or insular possession, and that said eggs shall not be permitted in any way to go into consumption as food stuffs:

Now, therefore, it is hereby ordered, adjudged, and decreed that the said eggs be delivered to the said Spencer and Howes, the owners and claimants thereof.

HENRY H. SWAN, *District Judge.*

NOVEMBER 25, A. D. 1908.

The facts in this case were as follows:

On or about June 30, 1908, an inspector of the Department of Agriculture found in the possession of Spencer & Howes, in Detroit, Mich., a consignment of 276 tubs of unshelled, frozen eggs which had been shipped to them by C. Eberle & Sons, of Cincinnati, Ohio. The tubs bore no label or other marks which would indicate the nature of the contents, but the consignment had been invoiced as eggs. An investigation made by an inspector of the Department of Agriculture revealed the fact that these were refuse eggs culled by the shippers from fresh, sound, and salable eggs and afterwards broken and the contents frozen into a solid mass.

On July 30, 1908, the facts were reported by the Secretary of Agriculture to the United States attorney for the eastern district of Michigan and libel for seizure and condemnation was duly filed, with the result hereinbefore stated.

H. W. WILEY,
F. L. DUNLAP,
GEO. P. MCCABE,
Board of Food and Drug Inspection.

Approved:

JAMES WILSON, *Secretary of Agriculture.*

WASHINGTON, D. C., *March 13, 1909.*

[F. and D. No. 797. S. No. 287. Issued March 19, 1910. United States Department of Agriculture, office of the Secretary.]

ADULTERATION OF DESICCATED EGG.

[Notice of Judgment No. 227, food and drugs act.]

On or about July 31, 1909, the Columbia Desiccated Egg Co., of Chicago, Ill., shipped from the State of Illinois into the District of Columbia six drums of desiccated egg. Analysis of samples of this product made in the Bureau of Chemistry, United States Department of Agriculture, showed it to be adulterated within the meaning of the Food and Drugs Act, of June 30, 1906. As it appeared from the findings of the analyst and report made that the shipment was liable to seizure under section 10 of the act, the Secretary of Agriculture reported the facts to the United States attorney for the District of Columbia. In due course a libel was filed against the said six drums of desiccated egg, charging adulteration of the product within the meaning of the act, because it was in a filthy, decomposed, and putrid condition and unfit for human consumption, and praying seizure, condemnation, and forfeiture. On October 29, 1909, the said Columbia Desiccated Egg Co. filed an answer and set up claim to the product. Subsequently, on January 31, 1910, the attorneys for the Columbia Desic-

cated Egg Co., by leave of court, withdrew said answer and struck out their appearance from the record. Accordingly, on January 31, 1910, there being no claimant of record, the case came on for final hearing and the court rendered its decree of condemnation and forfeiture in substance and form as follows:

IN THE SUPREME COURT OF THE DISTRICT OF COLUMBIA—HOLDING A DISTRICT COURT.

UNITED STATES OF AMERICA
vs.
SIX DRUMS OF COLUMBIA BRAND DESICCATED EGG. } District Docket No. 836.

JUDGMENT OF CONDEMNATION.

Upon motion of the United States for judgment of condemnation in the above-entitled cause, and it appearing to the court that upon the libel filed herein on the eighteenth day of August, A. D. 1909, the marshal of the United States for the District of Columbia has seized five drums of Columbia Brand Desiccated Egg, found in the possession of Holmes and Son; and that the said drums of desiccated egg, and each of them, were transported from the State of Illinois to the District aforesaid, and remain in the possession of the said Holmes and Son, unsold and in original unbroken packages; that a copy of the writ was duly served upon Holmes and Son by the said marshal of the United States, and a copy of the same duly affixed to the court-house door; and that the answer of the Columbia Desiccated Egg Co., a body corporate, as intervenors, filed herein on the twenty-ninth day of October, A. D. 1909, has been withdrawn, and the appearance of the attorneys for said Columbia Desiccated Egg Co. has been stricken out, and the time for filing the response and answer to the libel herein has expired, and no response or answer being filed to said libel, and no objection being signified to the court; and it further appearing that the contents of the said five drums of desiccated egg, and each of them, are in a filthy, decomposed and putrid condition, and unfit for human consumption,

It is, by the court, this thirty-first day of January, A. D. 1910

Adjudged, ordered and decreed: That the contents of the said five drums of desiccated egg in the custody of the said marshal of the United States, are adulterated within the meaning of the act of Congress approved June 30, A. D. 1906.

It is further ordered that the said contents of the five drums of desiccated egg, and each of them, be, and they are hereby condemned, and shall be destroyed by the said marshal of the United States, in such manner as provided by the said act of Congress approved June 30, A. D. 1906.

It is further ordered that the said Holmes and Son pay all the costs of these proceedings.

By the Court.

WENDELL P. STAFFORD, *Justice.*

This notice is given pursuant to section 4 of the Food and Drugs Act of June 30, 1906.

JAMES WILSON, *Secretary of Agriculture.*

WASHINGTON, D. C., *February 25, 1910.*

[S. No. 371. F. & D. No. 1036. Issued April 7, 1910. United States Department of Agriculture, office of the Secretary.]

ADULTERATION OF EVAPORATED EGG.

[Notice of judgment No. 252, food and drugs act.]

On or about November 19, 1909, Armour & Company, Washington, D. C., offered for sale in the District of Columbia one barrel of a food product known as evaporated egg. Analysis of samples of this product made in the Bureau of Chemistry, United States Department of Agriculture, showed it to be adulterated within the meaning of the food and drugs act of June 30, 1906. As it appeared from the findings of the analyst and report made that the product was liable to seizure under section 10 of the act, the Secretary of Agriculture reported the facts to the United States attorney for the District of Columbia.

In due course a libel was filed against the said barrel of evaporated egg, charging adulteration of the product within the meaning of the act, in that it was in a filthy, decomposed, and putrid condition and unfit for human consumption, and praying seizure, condemnation, and forfeiture.

On January 10, 1910, no response or answer having been filed to the libel, the case came on for final hearing, and the court rendered its decree of condemnation and forfeiture in substance and in form as follows:

IN THE SUPREME COURT OF THE DISTRICT OF COLUMBIA, HOLDING A DISTRICT COURT.

UNITED STATES OF AMERICA
vs.
ONE BARREL OF EVAPORATED EGG. } District No. 855.

JUDGMENT OF CONDEMNATION.

Upon motion of the United States for judgment of condemnation in the above-entitled cause, and it appearing to the court that upon the libel filed herein on the nineteenth day of November, A. D. 1909, the marshal of the United States for the District of Columbia has seized one barrel of evaporated egg; and it further appearing that the said barrel of evaporated egg was found in the possession of Armour and Company, a body corporate, and that the said Armour and Company was offering the said barrel of evaporated egg for sale in the District of Columbia, and that the said barrel of evaporated egg was transported from the State of Illinois to the District of Columbia, and remained unsold in said District, and that a copy of the writ was duly served upon the said Armour and Company by the said United States marshal, and a copy of the same duly affixed to the court-house door, and that the time for filing the response and answer to the libel herein has expired, and that no response or answer having been filed to said libel, and no objection being signified to the court; and it further appearing that the contents of the said barrel of evaporated egg are in a filthy, decomposed, and putrid condition, and unfit for human consumption;

It is, by the court, this —— day of January, A. D. 1910;

Adjudged, ordered, and decreed, That the contents of the said barrel of evaporated egg in the custody of the United States marshal are adulterated within the meaning of the act of Congress approved June 30, 1906.

It is further ordered that the said contents of the said barrel of evaporated egg be, and they are hereby, condemned and shall be destroyed by the said marshal of the United States, in such manner as provided by the act of Congress approved June 30, 1906.

It is further ordered that the said Armour and Company pay all the costs of these proceedings.

BY THE COURT.

This notice is given pursuant to section 4 of the food and drugs act of June 30, 1906.

JAMES WILSON, *Secretary of Agriculture.*

WASHINGTON, D. C., *March 8, 1910.*

[S. 378. F. & D. No. 1059. Issued March 19, 1910. United States Department of Agriculture, office of the Secretary.]

ADULTERATION OF LIQUID EGGS.

[Notice of judgment No. 224, food and drugs act.]

In accordance with the provisions of section 4 of the food and drugs act of June 30, 1906, and of regulation 6 of the rules and regulations for the enforcement of the act, notice is given that on the 21st day of December, 1909, in the district court of the United States for the southern district of New York, judgment was rendered in the case of the United States against 144 cans of frozen eggs, wherein a libel was filed under section 10 of the aforesaid act, alleging in substance that 144 cans of liquid eggs, frozen, which had been shipped from Boston, Mass., to New York City, were adulterated in that each of the aforesaid cans contained an article of food, to wit, liquid eggs, to which formaldehyde, a poisonous substance injurious to health, had been added; and further adulterated in that said eggs were composed wholly or in part of filthy, decomposed, and putrid matter.

The libel prayed process against all claimants to said liquid eggs and seizure and condemnation of the same. No claimant having appeared to make answer to the libel, the court rendered the following decree:

At a stated term of the district court of the United States of America, for the southern district of New York, held at the United States court rooms, in the city of New York, in the said district, on the 21st day of December, in the year of our Lord one thousand nine hundred and nine.

Present—The Honorable GEORGE B. ADAMS, district judge.

THE UNITED STATES OF AMERICA
vs.
ONE HUNDRED FORTY-FOUR CANS FROZEN EGGS.

FINAL DECREE.

The monition issued in this cause, having been heretofore returned, and the usual proclamation having been made, and the default of all persons being duly entered, it is thereupon, on motion of Henry A. Wise, esq., attorney for the United States, ordered, sentenced, and decreed, by the court, now here, and his honor, the district judge, by virtue of the power and authority in him vested, doth hereby order, sentence, and decree, that the goods, wares, and merchandise above mentioned be, and the same accordingly are, condemned as forfeited to the United States.

And upon like motion it is further ordered, sentenced, and decreed that the clerk of this court issue a writ of destruction to the marshal of the district, directing the said marshal to destroy said goods, wares, and merchandise, the said writ to be returnable on the first Tuesday of January, 1910.

The facts which led to the above seizure were:

On or about November 29, 1909, there was found on the wharf of the New England Navigation Company, New York City, 144 cans of liquid eggs, which were originally consigned by Henry Sloan & Co. from Buffalo, N. Y., to Morris Brown, of Boston, Mass. An inspector of the United States Department of Agriculture called at the establishment of the Boston consignee to collect a sample, which was refused by said consignee, acting upon the instructions of his immediate consignor, Sloan, who had stated to him in a letter that the eggs were doctored and should be hidden from the inspector and immediately shipped to Samuel Rottenberg, New York City. On November 27, 1909, they were reshipped by the said Morris Brown to said Rottenberg and were seized on Pier 18, North River, New York City, before delivery could be made to him.

Henry Sloan & Co., the first consignors, are dealers in "spot" and rotten eggs, which they claimed were marketed solely for tanners' use. Samuel Rottenberg, of New York City, the last-named consignee, is a dealer engaged in bakers' supplies, the largest portion of his trade being in the distribution of eggs. The circumstances of the shipment and the business in which the parties are engaged warranted the assumption that said eggs were putrid and unfit for human consumption, whereupon, on November 29, 1909, the Secretary of Agriculture reported the foregoinr facts to the United States attorney for the southern district of New York, who filed the above libel, with the result hereinbefore stated.

JAMES WILSON,
Secretary of Agriculture.

WASHINGTON, D. C., *February 25, 1910.*

[Notice of Judgment No. 51. Issued April 15, 1909. United States Department of Agriculture, Office of the Secretary, Board of Food and Drug Inspection.]

MISBRANDING OF BOTTLED BEER (AS TO PLACE OF MANUFACTURE).

[Notice of Judgment No. 51, food and drugs act.]

In accordance with the provisions of section 4 of the food and drugs act of June 30, 1906, and of regulation 6 of the rules and regulations for the enforcement of the act, notice is given of the judgment of the court in the case of the United States *v.* 50 cases of bottled beer (Joseph Fallert Brewing Company, owner) lately pending, and finally determined on the 15th day of July, 1908, in the district court of the United States for the eastern district of New York.

The above-stated case was a proceeding of libel for seizure and condemnation, under section 10 of the aforesaid act, of beer which was misbranded within the terms of section 8 of the act, in this: The labels on the bottles bore, among other things, the words "Saint Louis" and "Bohemian beer," thereby representing the beer to be Bohemian beer and to have been manufactured in St. Louis; both of which representations were false, misleading, and deceptive, because the beer was not Bohemian beer and had not been manufactured in St. Louis, but in Brooklyn, N. Y.

No claimant having appeared, and the case having come on for hearing in the regular course, the court rendered the following decree:

At a Stated Term of the United States District Court held in and for the Eastern District of New York, at the Court House of said Court, in the Federal Building, in the Boro of Brooklyn, New York, on the 15th day of July, 1908.

UNITED STATES
vs.
FIFTY CASES OF BOTTLED BEER.

Present: Honorable THOMAS IVES CHATFIELD, *United States District Judge.*

An information having been filed herein on the 17th day of April, 1908, by William J. Youngs, United States attorney for the eastern district of New York, in a cause of seizure, confiscation, and condemnation of fifty cases of bottled beer, under section 8 of the food and drugs act of June 30, 1906, and a monition having issued to the United States marshal of this district on the said 17th day of April, 1908, returnable May 6, 1908, and the said marshal having made return on the said 6th day of May, 1908, and the said marshal having given due notice to the Joseph Fallert Brewing Company, the owner of said fifty cases of bottled beer, that this court would proceed to the trial and condemnation thereof, should no claim be interposed therefor, which return has been duly filed, and the usual proclamation having been made, and no person having interposed a claim herein, and it appearing by the said information herein that the said fifty cases of bottled beer were subject to seizure and confiscation by the United States for the causes set forth, that is to say, for the reason that the said fifty cases of bottled beer were offered for shipment by the Joseph Fallert Brewing Co. on the steamer *Seguranta* of the Ward Line, from the Prentiss Stores, in the Boro of Brooklyn, eastern district of New York, to Guantanamo, in the island of Cuba, the said island of Cuba being a foreign country and the said shipment being attempted with the intent to export the said fifty cases of bottled beer from the port of New York and eastern district of New York and United States of America to a foreign port, to wit, Guantanamo, island of Cuba, the said fifty cases of bottled beer and each of the bottles therein contained bearing a false and fraudulent brand, and the said fifty cases of bottled beer and each and every of the bottles contained therein being misbranded contrary to the pure food and drugs act of June 30, 1906, and also for the reason that the said fifty cases of bottled beer and each and every bottle contained therein bears the words "St. Louis," whereas the said beer was brewed and bottled in the Boro of Brooklyn, eastern district of New York, by the Joseph Fallert Brewing Co., there being nothing on said bottles to indicate in any way or manner in what place the said beer was made and bottled or if at any other place than St. Louis, as required by law, and the said brands on the said cases and bottles contained therein were misleading and calculated to deceive purchasers; and it further appearing that the said cause is now in default, no person having interposed a claim herein, it is

Ordered, adjudged, and decreed that the defaults of all persons be entered and that the said fifty cases of bottled beer above described, now in the possession of the marshal of this district, be, and the same hereby are, declared forfeited and confiscated to the United States; and it is further

Ordered that the clerk of this court issue to the marshal the usual writ of venditioni exponas, commanding him, the said marshal, to sell the said fifty cases of bottled beer on the premises of the Joseph Fallert Brewing Co. on the twenty-third day of July, 1908, at 12 m., upon giving six days' notice of the time and place of such sale in the Standard Union, a newspaper published in the Boro of Brooklyn and eastern district of New York, and that the marshal require the purchaser or purchasers at said sale to give a bond or other good and sufficient security for the proper branding of said bottles of beer, and that the marshal pay the proceeds of said sale, after deducting the costs, charges, and expenses of said sale, into court, to be disposed of according to law.

THOMAS I. CHATFIELD, *U. S. J.*

And afterwards, on the 23d day of July, 1908, in compliance with the aforesaid decree, the said 50 cases of beer were sold at public auction and the proceeds ($60), less legal costs, were paid into the Treasury of the United States.

The facts in the case were as follows:

On April 17, 1908, an inspector of the Department of Agriculture found in the possession of the Ward Steamship Company, Brooklyn, N. Y., a consignment of 50 cases of bottled beer, each bottle bearing two labels, upon one of which were printed the following words, letters, and designs:

[Picture of eagle and flag]	SAINT LOUIS B B B BOHEMIAN	Bohemian Brewery's Bottling B B B Barton B. Bostwick, Agent.

LA MEJOR DEL UNIVERSO

On the other were printed:

Brilliant BOHEMIAN Beer	SAINT LOUIS B-B-B	Best BOHEMIAN Brew

The beer was consigned by the Joseph Fallert Brewing Company, Brooklyn, N. Y., to Guantanamo, Cuba.

An investigation by an inspector of the Department of Agriculture disclosed that the beer was manufactured and bottled in Brooklyn, N. Y., and was not Bohemian beer. Accordingly, on April 17, 1908, the Secretary of Agriculture reported the facts to the United States attorney for the eastern district of New York, who forthwith filed a libel for seizure and condemnation of the said beer, with the result hereinbefore stated.

H. W. WILEY,
F. L. DUNLAP,
GEO. P. MCCABE,
Board of Food and Drug Inspection.

Approved:

JAMES WILSON, *Secretary of Agriculture.*

WASHINGTON, D. C., *April 1, 1909.*

MISBRANDING OF BEER (AS TO QUANTITY OF ALCOHOL).

[N. J. 65.]

In accordance with the provisions of section 4 of the food and drugs act of June 30, 1906, and of regulation 6 of the rules and regulations for the enforcement of the act, notice is given that on the 17th day of December, 1908, in the district court of the United States for the district of Kansas, in a prosecution by the United States against the Heim Brewing Company, a corporation of Kansas City, Mo., for violation of section 2 of the aforesaid act in introducing into Kansas from Missouri and in shipping and delivering for shipment from Missouri to Kansas a quantity of bottled beer, misbranded as to the amount of alcohol contained therein, the said Heim Brewing Company having entered a plea of guilty, judgment was rendered by the court in substance and in form as follows:

IN THE DISTRICT COURT OF THE UNITED STATES FOR THE DISTRICT OF KANSAS, FIRST DIVISION.

THURSDAY, *December 17, 1908.*

THE UNITED STATES OF AMERICA
vs.
THE HEIM BREWING COMPANY, A CORPORATION. } No. 3927.

Now comes as well the United States of America, by J. S. West, assistant district attorney, as said defendant The Heim Brewing Company, a corporation, by J. A. Finley, its traveling auditor, being duly authorized to appear and plead on behalf of said defendant. Thereupon said defendant, through its said authorized agent, being arraigned upon the information herein filed, enters its plea of guilty thereto.

Thereupon it is now by the court here considered, ordered, and adjudged that said defendant The Heim Brewing Company, a corporation, make its fine unto the United States of America in the sum of one hundred ($100.00) dollars, and that it pay the costs of this prosecution.

The facts in the case were as follows:

On November 4, 1908, Dr. S. J. Crumbine, secretary of the state board of health of Kansas, acting under authorization of the Secretary of the United States Department of Agriculture in accordance with regulation 3 of the rules and regulations for the enforcement of the food and drugs act of June 30, 1906, procured from the sheriff of Harvey County, Kans., in pursuance of an order of court therefor, seven barrels labeled "Kind, H. O. B.; #A949; Fargo; CROWNS: CROCKERY for Rim Conrad, Newton, Kans., H. O. B. L. S." (in pencil) "(1) (9), 9-26," and filled with bottles labeled and branded "Hop-On. HB. (#11) Heim Brewery, Branch of the Kansas City Breweries Co. A mild beer, containing 1.82 per cent of alcohol. Guaranteed to comply with the Pure Food & Drugs Act of June 30, 1906, and Kansas Pure Food Law." This beer had been shipped by the Heim Brewing Company from Missouri to Newton, Kans., and was confiscated and ordered destroyed by the court in case of State of Kansas *v.* Conrad et al. A number of samples was subjected to analysis by a collaborating chemist of the Bureau of Chemistry of the Department of Agriculture, with the result that alcohol was found to be present in quantity varying from 4.41 per cent to 4.78 per cent.

The Heim Brewing Company having been afforded an opportunity to show any fault or error in the findings of the analyst, and having failed to do so, the facts were reported to the United States attorney for the district of Kansas, who filed an information against the said Heim Brewing Company, with the result hereinbefore stated.

H. W. WILEY,
F. L. DUNLAP,
GEO. P. MCCABE,
Board of Food and Drug Inspection.

Approved:
JAMES WILSON, *Secretary of Agriculture.*

WASHINGTON, D. C., *May 5, 1909.*

[F. & D. Nos. 34-C and 35-C. Issued March 4, 1910. United States Department of Agriculture, office of the Secretary.]

ADULTERATION OF CREAM.

[Notice of judgment No. 185, food and drugs act.]

In accordance with the provisions of section 4 of the food and drugs act of June 30, 1906, and of regulation 6 of the rules and regulations for the enforcement of the act, notice is given of the judgment of the court in the cases of the United States *v.* Elijah E. Blough and United States *v.* Samuel C. Harley, prosecutions in the police court of the District of Columbia against the said Blough and Harley for violation of section 2 of the aforesaid act in the sale in said District of cream which was adulterated in that butter fat, a valuable constituent thereof, had been abstracted in part therefrom.

The said Elijah E. Blough and Samuel C. Harley were arraigned in the above-stated court on November 10 and 19, 1909, respectively, under informations filed by the United States attorney charging the aforesaid offenses, and, having entered their pleas of guilty, were on said dates each sentenced to pay a fine of $10.

The facts in the cases were as follows:

On October 13, 1909, an inspector of the health department of the District of Columbia, acting under authorization of the Secretary of Agriculture of the United States to Dr. William C. Woodward, health officer of said District, procured a sample from each of two cans of cream which at that time were at the Union Depot in Washington, D. C., having been shipped by rail from Manassas, Va., by Elijah C. Blough and Samuel C. Harley to Storm & Sherwood, Washington, D. C. The samples were analyzed by the said health department of the District of Columbia and found to contain less than 18 per cent of milk fat, indicating that a part of the milk fat had been abstracted from said cream. It therefore appeared that the cream was adulterated within the meaning of section 7 of the food and drugs act, and the said Blough and Harley were duly notified thereof and were given an opportunity to be heard in reference thereto, and it appearing that the act had been violated by the said parties, the said health officer reported the facts to the United States attorney for the District of Columbia, who forthwith filed informations in the police court of said District against the said Blough and Harley, who appeared in said court on November 10 and 19, 1909, respectively, with the results hereinbefore stated.

JAMES WILSON, *Secretary of Agriculture.*

WASHINGTON, D. C., *January 28, 1910.*

[F. & D. No. 45-c. Issued March 30, 1910. United States Department of Agriculture, Office of the Secretary.]

ADULTERATION OF CREAM.

[Notice of Judgment No. 241, food and drugs act.]

On January 26, 1910, Samuel C. Harley, Manassas, Va., sold and delivered at the Union Station, Washington, D. C., a quantity of cream. Dr. William C. Woodward, health officer of the District of Columbia, acting by authority of the Secretary of Agriculture, caused a sample from the above delivery to be procured and analyzed. As the findings of the analyst and the report made indicated that the article was adulterated within the meaning of the food and drugs act of June 30, 1906, the said Samuel C. Harley was given an opportunity to be heard, and it appearing after the hearing held that the above sale was made in violation of said act, the said health officer reported the facts to the United States attorney for the District of Columbia. In due course a criminal information against the said Samuel C. Harley was filed in the police court of the District of Columbia, charging the above-named sale and that the product was adulterated in that a valuable constituent, to wit, butter fat, had been abstracted. On February 8, 1910, the said defendant entered a plea of guilty and the court imposed upon him a fine of $15.

This notice is given pursuant to section 4 of the food and drugs act of June 30, 1906.

JAMES WILSON, *Secretary of Agriculture.*

WASHINGTON, D. C., *February 28, 1910.*

MISBRANDING OF BUTTER (AS TO NAME AND LOCATION OF MANUFACTURER).

[N. J. 67.]

In accordance with the provisions of section 4 of the food and drugs act of June 30, 1906, and of regulation 6 of the rules and regulations for the enforcement of the act, notice is given of the judgment of the court in the case of The United States *v.* 13 boxes of butter, a proceeding of libel for seizure and condemnation of said butter, under section 10 of the aforesaid act, wherein The Fox River Butter Company, of Cincinnati, Ohio, was claimant, lately pending and finally determined on December 11, 1908, in the district court of the United States for the southern district of Ohio, by the entry of an order directing the marshal to redeliver said butter to said claimant upon payment by it of all costs of the proceeding and execution of a proper bond prescribed by said section 10.

The butter was misbranded, within the meaning of section 8 of the aforesaid act, as alleged in the libel, as follows:

II.

Your libelant represents to the court that each box of butter is labeled, marked, or branded on the outside as follows: "White clover brand butter. The Elgin Butter Company, Elgin, Illinois," and that each package contained in each box of butter is labeled, marked, and branded as follows: "White clover brand butter. The Elgin Butter Company, Elgin, Illinois. This famous butter is made in the only and original Elgin (Illinois) creameries, established 1870. We created the name of Elgin butter and established its reputation throughout the United States."

* * * * * * *

IV.

Your libelant says that the said thirteen boxes of butter, branded as aforesaid, are illegally held and that said articles are misbranded in violation of the act of Congress of June 30, 1906, and liable to condemnation as provided therein, for the reason that each and every package of butter contained in said thirteen boxes purports to contain Elgin creamery butter made at Elgin, Illinois, whereas in truth and in fact none of said packages of butter were made at the Elgin creamery at Elgin, Illinois, but were made by Gus H. Weber, at his creamery near Elba, Wisconsin, and were shipped by him from Elba, Wisconsin, to Cincinnati, Ohio, and the branding of said packages is misleading and false so as to deceive and mislead the purchaser as to the kind and quality of butter in said packages, and it is, therefore, a misbranding within the meaning of said act of Congress.

The claimant having admitted the allegations of the libel, and the case having come on for final hearing on the date hereinbefore stated, the court entered its order, as aforesaid, in substance and in form as follows:

UNITED STATES DISTRICT COURT, SOUTHERN DISTRICT OF OHIO, WESTERN DIVISION.

UNITED STATES OF AMERICA,
vs.
13 BOXES OF BUTTER. } No. 1955.

ORDER.

The claimants of the butter herein referred to having admitted in open court that the facts and statements contained in the libel herein are true, and having presented bond in the sum of three hundred ($300.00) dollars, as provided in section 10 of the act of Congress, approved June 30, 1906,

It is hereby ordered that upon payment of the costs of this action, and the approval of said bond by the clerk as to its efficiency, the marshal is directed to release to the claimant, to-wit, the Fox River Butter Company, the cases of butter seized herein.

The facts in the case were as follows:

On or about December 8, 1908, an inspector of the Department of Agriculture found in the possession of the Fox River Butter Company, at Cincinnati, Ohio, 13 boxes of butter labeled "White clover brand butter. The Elgin Butter Company, Elgin, Illinois." Each box or shipping case contained 60 packages of 1 pound each, labeled and branded "White clover brand butter. The Elgin Butter Company, Elgin, Illinois. This famous butter is made in the only and original Elgin (Illinois) creameries, established 1870. We created the name of Elgin butter and established its reputation throughout the United States." The butter had been manufactured at Elba, Wis., by Gus H. Weber, and was shipped by him from said city to the Fox River Butter Company, Cincinnati, Ohio. It was evident, therefore, that the labels on the shipping boxes and on the packages of goods were grossly false, misleading, and deceptive, and in violation of section 8 of the act. Accordingly, on December 9, 1908, the facts were reported by the Secretary of Agriculture to the United States attorney for the southern district of Ohio, and libel for seizure and condemnation, under section 10 of the act, was duly filed, with the result hereinbefore stated.

H. W. WILEY,
F. L. DUNLAP,
GEO. P. MCCABE,
Board of Food and Drug Inspection.

Approved:
JAMES WILSON, *Secretary of Agriculture.*

WASHINGTON, D. C., *May 11, 1909.*

MISBRANDING OF BUTTER (RENOVATED BUTTER.)

[N. J. 42.]

In accordance with the provisions of section 4 of the food and drugs act of June 30, 1906, and of regulation 6 of the rules and regulations for the enforcement of the act, notice is given that on the 6th day of November, 1908, in the police court of the District of Columbia, in a criminal prosecution by the United States against Corrine H. Redman for violation of section 2 of the aforesaid act in the sale and offer for sale in the District of Columbia of a quantity of renovated butter under the name of another article of food, that is to say, Elgin butter, the said Corrine H. Redman having entered a plea of guilty to two distinct and separate offenses, the court imposed upon him a fine of $50 for each offense.

The facts in the case were as follows:

On June 20 and 22, 1907, an inspector of the Department of Agriculture purchased from Corrine H. Redman, proprietor of the Elgin Creamery Company, 220 Ninth street N. W., Washington, D. C., samples of a quantity of butter exposed for sale at the store of said company, and advertised on a blackboard at the door as "Elgin Creamery Co., 4 Pounds Best Elgin Butter only $1.00 today only," and also represented by the dealer to be very best creamery butter. The samples were duly analyzed in the Bureau of Chemistry of said department and found to be renovated butter. On July 12, 1907, the Secretary of Agriculture accorded the Elgin Creamery Company a hearing, and as

no evidence was introduced by the dealer to show any fault or error in the determination of the analysts of the department, the facts were duly reported to the Attorney-General and by him to the United States attorney for the District of Columbia who, on October 30, 1908, filed an information in the police court of said District against Corrine H. Redman, proprietor of said Elgin Creamery Company, with the result hereinbefore stated.

H. W. WILEY,
F. L. DUNLAP,
GEO. P. MCCABE,
Board of Food and Drug Inspection.

Approved:
JAMES WILSON, *Secretary of Agriculture.*

WASHINGTON, D. C., *February 26, 1909.*

Cases in the hands of United States attorneys to institute prosecution, but which, so far as the Bureau of Chemistry is advised, have not been adjudicated.

CRIMINAL CASES.

I. S. No.	F. & D. No.	Substance.	Defendant.	Charge.
8477-b	1322	Desiccated eggs.....	R. Smithson, Chicago, Ill.	Consists in whole or in part of a filthy, decomposed, or putrid animal or vegetable substance.
8478-b	1322	.....do.....	.....do.....	Do.
9770-b	1243	Frozen eggs.....	Armour & Co., Chicago, Ill.	Consists in whole or in part of a filthy, decomposed, or putrid animal or vegetable substance. Labeled "Fancy selected eggs, guaranteed pure and wholesome," when they are unfit for food purposes.
10317-b	1281	.....do.....	Henry Sloan & Co., Buffalo, N. Y.	Consists in whole or in part of a filthy, decomposed, or putrid animal or vegetable substance, and preserved with formaldehyde.
10318-b	1281	.....do.....	.....do.....	Do.
10319-b	1281	.....do.....	.....do.....	Preserved with formaldehyde.
10320-b	1281	.....do.....	.....do.....	Consists in whole or in part of a filthy, decomposed, or putrid animal or vegetable substance, and preserved with formaldehyde.
10321-b	1281	.....do.....	.....do.....	Preserved with formaldehyde.
11930-b	1343	Desiccated eggs.....	National Bakers' Egg Co., Sioux City, Iowa.	Consists in whole or in part of a filthy, decomposed, or putrid animal or vegetable substance.
23119-a	982	Liquid eggs.....	Hipolite Egg Co., St. Louis, Mo.	The product contains boric acid.
23322-a	782	Ice cream.....	Friendship Ice Cream Factory, F. Storty, manager, Washington, D. C.	Too low in fat, and is, therefore, not ice cream.

Cases in the hands of United States attorneys to institute prosecution, but which, so far as the Bureau of Chemistry is advised, have not been adjudicated—Continued.

SEIZURE CASES.

Seizur No.	Substance.	Place where seized.	Shipper.
260	Crystal eggs	Minneapolis, Minn	St. Louis Crystal Egg Co., St. Louis, Mo.
262	.....do	Boston, Mass	Do.
305	Desiccated-egg product	Baltimore, Md	Columbia Desiccated Egg Co., Chicago, Ill.
335	.....do	Norfolk, Va	Do.
337	.....do	.....do	Do.
338	.....do	.....do	Do.
342	.....do	Philadelphia, Pa	Do.
363	.....do	.....do	Wood & Selick, New York.
371	Evaporated eggs	Washington, D. C	Armour & Co., Washington, D. C.
377	Frozen eggs	Boston, Mass	R. Smithson, Chicago, Ill.
380	.....do	.....do	Henry Sloan Co., Buffalo, N. Y.
407	Eggs	Pittsburg, Pa	Buffalo Cold Storage Co., Buffalo, N. Y.
419	Desiccated eggs	Philadelphia, Pa	National Bakers' Egg Co., Sioux City, Iowa.
440	Desiccated egg product	New York City	Columbia Desiccated Egg Co., Chicago, Ill.
452	.....do	Norfolk, Va	National Bakers' Egg Co., Sioux City, Iowa.
453	.....do	.....do	The Crandall-Pettee Co., New York City.
465	Desiccated egg	New York City	Monarch Desiccated Egg Co., Chicago, Ill.
470	Frozen egg	Boston, Mass	Max Walter Co., Chicago, Ill.
479	.....do	New York City	R. Smithson, Chicago, Ill.
487	Desiccated egg	.....do	L. V. Cloud, Chicago, Ill.
518	Evaporated egg	Syracuse, N. Y	C. H. Weaver & Co, Chicago, Ill.

(The committee thereupon, at 12 meridian, adjourned, subject to the call of the chair.)

THURSDAY, MAY 5, 1910.

COMMITTEE ON MANUFACTURES,
Thursday, May 5, 1910—10 a. m.

The Committee on Manufactures met pursuant to the call of the chair.

Present: Senators Heyburn (chairman) and Oliver.

STATEMENT OF F. C. WEBER, OF WASHINGTON, D. C.

The CHAIRMAN. Will you please state your official position?

Mr. WEBER. I am a chemist in the Bureau of Chemistry, United States Department of Agriculture.

The CHAIRMAN. Now, have you knowledge with reference to the cold-storage methods of handling meats?

Mr. WEBER. Well, in regard to the knowledge of the actual operation of cold storage, I wouldn't say that I had knowledge of that. We have carried on investigations with meats that I have placed in storage myself under the same conditions.

The CHAIRMAN. And your knowledge is in regard to the effect of cold storage as gathered from your own experiments?

Mr. WEBER. Yes, sir.

The CHAIRMAN. Have you investigated public cold-storage plants or private cold-storage plants?

Mr. WEBER. No, sir; I have never investigated those.

The CHAIRMAN. Well, give us the result of your experience in cold storage from the standpoint that you state you have experimented.

Mr. WEBER. We conducted experiments in an effort to determine, if possible, by chemical means, at what time or when the deterioration of meats in storage would take effect—to determine it chemically. I do not suppose it is necessary to go into the details of the methods?

The CHAIRMAN. Yes, sir; it is the details we want; that is, the details generally.

Mr. WEBER. The method we used was by distilling a weighed quantity of meat into an iodine solution; that is, a one-hundredth-normal iodine solution. Samples were weighed out and treated with pepsin hydrochloric-acid solution and then distilled into the standard solution of one-hundredth-normal iodine. The amount of iodine reduced was then determined.

The CHAIRMAN. You may tell the results. Take up meat first.

Mr. WEBER. We took fresh meat and placed it in cold storage, and then at the end of two, four, and six months' storage, which was all we had time to do—we have only been working on this for six months—at the end of two months there was practically no change that we could determine; that is, within the limits of the method itself.

The CHAIRMAN. Was the meat and the fat equally sweet at the end of two months as compared with the condition when it was killed and fresh?

Mr. WEBER. Practically the same; yes, sir; as far as we can tell. This is just a chemical method to determine the aging of meats.

The CHAIRMAN. You didn't make the test by cooking it?

Mr. WEBER. No, sir. And at four months we were able to determine a slight difference, from 2 to 4 c. c. reduction of iodine. At the end of six months there is 6½ to 7 c. c. more of iodine reduced than in the corresponding fresh sample.

The CHAIRMAN. Has there been any deterioration in the meat in the cold storage under your care at the end of six months?

Mr. WEBER. I can say at the end of six months by this method that we have used that there is a deterioration shown—a slight deterioration.

The CHAIRMAN. How is it as to healthfulness of the meat?

Mr. WEBER. Well, I am not prepared really to say as to that. I do not know whether it would be more or less healthful. I couldn't say.

The CHAIRMAN. Give us your experience with regard to fish.

Mr. WEBER. Fish deteriorates somewhat more rapidly than the other products mentioned. An effort was made to try and get them in as fresh a condition as possible to compare them with our other materials in storage, and fish that we have gotten and killed right in the laboratory show that they were much fresher than those we obtained on the market.

The CHAIRMAN. At the end of what time did you make an examination after you placed them in cold storage?

Mr. WEBER. We have taken them out at the end of two, four, and six months.

The CHAIRMAN. With what results?

Mr. WEBER. Showing that at the end of six months there is some deterioration.

The CHAIRMAN. How much, comparatively speaking?

Mr. WEBER. Between fish and meat, you mean?

The CHAIRMAN. Between fresh fish and fish at the end of six months.

Mr. WEBER. Well, as represented by about 7 c. c. of the standard iodine solution, if that were expressed as ammonia it would mean about four one-hundredths of a per cent of ammonia.

The CHAIRMAN. Well, that conveys no idea to the ordinary layman, you know. I would like to have a percentage, if you can reduce it—a percentage of deterioration. Can you reduce that to per cent; that is, the depreciation in fish at the end of six months?

Mr. WEBER. It would be very hard to say what per cent that amount would be of the whole fish. It means that the sample of fish at the end of six months reduces 7 c. c. more iodine solution than the fresh fish.

The CHAIRMAN. Well, are they equally healthful and edible?

Mr. WEBER. Well, they would not be equally healthful and edible in regard to fish. There is a great difference in the fish.

The CHAIRMAN. How much difference?

Mr. WEBER. Well, it can be detected by this test.

The CHAIRMAN. It can be detected by the test?

Mr. WEBER. Yes, sir; and it can be detected by the appearance of the sample of fish after it is ground up and allowed to thaw. The meat has an entirely different appearance. The stored meat at that time is soft and mushy.

The CHAIRMAN. What would you say as to the difference between the progressive stages of three, four, and six months?

Mr. WEBER. Two, four, and six months?

The CHAIRMAN. Two, four, and six months. You can make a comparison as between those periods?

Mr. WEBER. Yes; there is some difference noted between two, four, and six months. I should say between two and four months there is very little difference shown; between four and six months a deterioration begins to show.

The CHAIRMAN. More rapidly?

Mr. WEBER. Yes, sir.

The CHAIRMAN. In proportion?

Mr. WEBER. Yes, sir.

The CHAIRMAN. What would you say, from your experience there in the laboratory, as to whether or not the fish at the end of six months are healthful to eat?

Mr. WEBER. I wouldn't say that they were harmful to eat. I couldn't say exactly as to healthfulness, but as regards their appearance and condition, if sold as fresh fish—they are not a fresh fish by any means.

The CHAIRMAN. Have you made any investigation as to the quantities of fish in cold storage?

Mr. WEBER. No, sir; I have not.

The CHAIRMAN. Now, you know in regard to eggs—the storage of eggs. What effect does cold storage have upon eggs, as to their healthfulness?

Mr. WEBER. I am not qualified to testify as to the healthfulness.

The CHAIRMAN. Well, you know the purpose of this investigation, and you have made some experiments with eggs. Just give us the purpose of the experiment.

Mr. WEBER. It was carried on in practically the same way—in exactly the same way as I have described as to meat and fish.

The CHAIRMAN. Give us the result.

Mr. WEBER. We examined the eggs when we put them in storage and when we took them out at a specified time—two, four, and six months.

The CHAIRMAN. What is the result?

Mr. WEBER. We have obtained an increase of 5 to 7 cubic centimeters of iodine during that time, which shows that the product has deteriorated.

Senator OLIVER. Let me ask, Mr. Weber, in what respect does it deteriorate. I just want to get the meaning of the word "deterioration," as you use it?

Mr. WEBER. As I am describing it here, and as the method was evolved to show protein, when it decomposes, is represented by ammonia. The method I have described determines the amount of ammonia. Now, we tried to make it delicate enough so as to determine the very small amount which is evolved during decomposition. Now, fresh eggs run about 25 cubic centimeters of iodine, utilized by the method that we used. With the stored egg, the ammonia being evolved, will run about 30 cubic centimeters. That is what I mean by expressing it as "deterioration."

Senator OLIVER. Then, as I understand you, in using the word "deteriorate," you simply mean that storage for an undue time causes the article of food, whether it be fish or eggs to contain less food product?

Mr. WEBER. Well, it would contain a little less food product, but it would be very small. The only thing we are trying to determine is the ammonia as it is evolved.

The CHAIRMAN. How does it affect the taste of these articles; does it make them more pleasant to the taste or unpleasant?

Mr. WEBER. You can readily detect the difference between a fresh egg and a stored egg.

The CHAIRMAN. Can the stored egg that is in that condition be used for every purpose that eggs are used for or for a limited number of purposes?

Mr. WEBER. I would say they could be used for a limited number of purposes; it is not a fresh egg in that condition.

The CHAIRMAN. After what period would you say it was not a fresh egg?

Mr. WEBER. Well, I would put it as low as six months.

The CHAIRMAN. After what period is cold-storage meat not fresh meat?

Mr. WEBER. If this experiment had run a little longer than six months I would probably be able to tell more about it; between six and nine months.

The CHAIRMAN. That is all unless you desire to make a further statement.

Mr. WEBER. No, sir; that is all.

STATEMENT OF F. C. COOK, OF WASHINGTON, D. C.

The CHAIRMAN. State your occupation?

Mr. COOK. I am a physiological chemist in the Bureau of Chemistry.

The CHAIRMAN. Have you investigated cold storage fowls for the purpose of determining as to the healthfulness of them?

Mr. COOK. Under Doctor Wiley's direction, I had charge of procuring quail and chickens. The chickens I saw killed and placed in cold storage, and it was our plan to every three months remove samples of those fowls from cold storage, both quail and chickens.

The CHAIRMAN. That is, your own cold storage?

Mr. COOK. Yes, sir; we hired space in the Center Market here in the city.

The CHAIRMAN. That is important. You hired the space in the cold storage at the Center Market?

Mr. COOK. Yes, sir. As I say, every three months we removed samples of the chickens and quail which I had placed in the cold storage, and we subjected them to tests, and the samples were decided by members of a jury, the jury not knowing which was the fresh and which was the cold-storage article, and further than that we made——

The CHAIRMAN. Give us the result as you go along so it will al be connected up, please.

Mr. COOK. After three months' storage, all of these articles—that is, the quail and the chickens—the members of the jury were unable to tell which was the fresh and which was the storage article; but after six months the majority decided that the cold-storage article was inferior; that is, without knowing absolutely which was which. After nine months, practically all of the members of the jury—there were seven to eight members of the jury—decided the cold-storage article tasted inferior to them, and after twelve months, and from that time on, the members were unanimous in deciding that the cold-storage article was inferior to the fresh article.

The CHAIRMAN. That applied to fowls?

Mr. COOK. That applied to quail and chickens. Further than that, we made chemical tests which served to show that about the same period—that is, at the end of six months—there was deterioration in meat which was detected by the tests we employed which seemed to substantiate the tasting test.

Then in regard to eggs, we did not carry out any tasting test on the eggs, but subjected them to a thorough chemical analysis, testing after about three, six, nine, and twelve months' storage.

The CHAIRMAN. Give us the results.

Mr. COOK. In other words, removing samples every three months from the cold storage at Center Market. At the end of about six months the whites lost their power of cohesion, and the whites and the yolks were separated with some difficulty at the end of six months. You must understand that these eggs, as well as the chickens, were absolutely fresh. I saw the chickens killed and put them in cold storage the same day; that is, no chance for the articles to stand around in the room to deteriorate, and I removed them from cold storage on the afternoon of the day before we tested them and kept them in our ice box in the Bureau of Chemistry. In other words, these conditions were exceptionally favorable to cold storage. There was no standing around the market for any time at all. There was a loss of water from the whites of the cold-storage eggs which amounted to 10 per cent of the total weight of the egg; in other words, a dozen eggs in cold storage one year weighed 10 per cent less than at the period I placed them in cold storage.

The CHAIRMAN. Is the shrinkage all in the water?

Mr. COOK. As far as we can tell; it may not be entirely, but it is largely from the white of the egg.

The CHAIRMAN. Do they deteriorate quickly—the white and the yolk of the egg?

Mr. COOK. As far as we can tell. I took the whole egg and mixed it together. At the end of this same period—twelve months—there was a characteristic musty odor from those eggs, and there was a breaking down of the organic phosphorous bodies, and other tests showed that the egg decomposed.

The CHAIRMAN. At what time?

Mr. COOK. At the end of twelve months. These tests showed up to a slighter extent at the end of six months, but they were very marked at the end of a year.

The CHAIRMAN. Now, did you make tests of any other meat than the chickens and quail?

Mr. COOK. I have done a little with beef, but only from three to six months, and at that time I didn't do enough to say much about that except to say that it didn't show any appreciable change at the end of three months. That is, with me.

The CHAIRMAN. Now, is there any other statement of fact in connection with your examination that you desire to add?

Mr. COOK. Nothing except that I would like to emphasize that all these tests were made under exceptional conditions. The chickens, for example, I saw killed, and placed them in cold storage the same day, and they were examined by the jury the day after they were removed. In the meantime they were kept in the ice box, and had no chance of deteriorating by standing. In other words, all the changes were due to cold storage, and we also noted that the meats, after removal from cold storage, deteriorated much faster than the fresh meats.

The CHAIRMAN. Tell us something more in detail of that fact.

Mr. COOK. Well, we have taken samples of cold-storage chicken and allowed it to stand at low temperature side by side with the fresh meat, and the meat we have from the cold-storage sample—the general appearance of the sample was poorer than that of the fresh sample. In other words, it is evident that the thawing of the meat fiber has weakened its power of resistance. We have not carried on any great series of tests of that sort.

The CHAIRMAN. Well, how extensive did you make that test; that is, the important test, as to the comparative condition of meat that comes out of cold storage with fresh meat that has not been in cold storage? Now, how much more rapidly will one deteriorate than the other?

Mr. COOK. Well, I can not really give a definite answer to that, but from the odor and the general appearance of the sample it appears to deteriorate faster. I can not say any more than that.

The CHAIRMAN. Have you made any examination of fowls or chickens or birds sold in the outside area of the market up here?

Mr. COOK. Why, the other day we had a sample of birds reach us, sent from Norfolk, which had been in cold storage two years, and the birds were in very poor condition.

The CHAIRMAN. What do you mean by very poor? Be a little more commonplace in your statement, please.

Mr. COOK. More definite?

The CHAIRMAN. Yes.

Mr. COOK. A great many of the heads had been removed, and there seemed to be a slime on the birds, and they were in a condition that you might call shabby.

The CHAIRMAN. Is not that slime one of the indications of cold-storage birds, fowls that have been taken out of cold storage and thawed out?

Mr. COOK. Well, we didn't notice it on chickens and quail, but it may be the case on other birds.

The CHAIRMAN. At any period?

Mr. COOK. I can not give a definite answer in regard to that. It is not true in regard to chickens. Chickens and quail dry up; the water is removed from the samples standing in cold storage.

The CHAIRMAN. Have you seen turkeys thawed out that had been in cold storage?

Mr. COOK. Yes; a great many times the samples are placed in tanks of water to fill up the water that has been removed in process of storage.

The CHAIRMAN. And what is the condition of these cold-storage birds that have been thawed out, with respect to their going to pieces rapidly?

Mr. COOK. We didn't test that. We just carried on the test I have indicated on samples partly drawn and partly undrawn that I saw killed and placed in cold storage myself. That was all that we have done so far.

The CHAIRMAN. Now, is there anything else that you have made an examination in relation to that you have not covered?

Mr. COOK. I think that covers pretty well our examination of cold-storage products.

Mr. ALBERT M. READ. Mr. Chairman, might I suggest a question?

The CHAIRMAN. Certainly.

Mr. READ. At what temperature were the chickens and eggs kept at the Center Market?

Mr. COOK. They were kept at a temperature of about 8°; in other words, slightly frozen throughout this entire period.

Mr. READ. Not the eggs?

Mr. COOK. No; the quail and the chickens were kept at that temperature. The eggs were kept at a temperature of 35°; just above the freezing point.

The CHAIRMAN. The others were slightly frozen?

Mr. COOK. Yes, sir; all the time.

Mr. S. D. URNER. May I ask a question, Mr. Chairman?

The CHAIRMAN. Certainly.

Mr. URNER. I would like to ask, in putting the fresh-killed poultry into the cold storage, the animal heat had been entirely removed, had it, before the bird was put into the cold room?

Mr. COOK. The birds were allowed to stand at room temperature and the animal heat was entirely removed.

Mr. URNER. And that was within one day?

Mr. COOK. That was within one day.

Mr. URNER. You say they were put in the same day?

Mr. COOK. They were killed about 9 o'clock and put in storage in the afternoon about 5. Part of the birds were chilled by being placed in iced water to remove the animal heat.

The CHAIRMAN. That is all, unless there is something you desire to state.

STATEMENT OF H. C. GORE, OF WASHINGTON, D. C.

The CHAIRMAN. Just state your full name and your occupation.

Mr. GORE. My name is H. C. Gore, and I am an assistant chemist in the Bureau of Chemistry. My work has been to try to develop a method for this work whereby we wouldn't need to use the benzoate of soda which is now universally used in preserving cider for a limited period until it can be consumed. And we found cold storage is a very great aid in holding cider sweet for a considerable period; and it not only holds it sweet, but holds its flavor, and for a period of about fifty days at the freezing point in cold storage we do not get any change that we can perceive, but at the end of that time it begins to ferment very gradually and is very delicious indeed, if it is made from high-grade apples, up to a period of about one hundred days, and then it begins to get hard and ferments and passes into hard cider. The storage period is about one hundred days in that case.

The CHAIRMAN. At what temperature did you hold the cider?

Mr. GORE. At the freezing point.

STATEMENT OF ALBERT M. READ, OF WASHINGTON, D. C.

Senator HEYBURN. Give your name and residence and business, please.

Mr. READ. Albert M. Read. I am secretary of the American Warehousemen's Association and the president of the Security Storage Company, of Washington, D. C.

The CHAIRMAN. Tell where you live, please.

Mr. READ. Washington, D. C. Shall I proceed?

The CHAIRMAN. Yes; proceed.

Mr. READ. The American Warehousemen's Association, through its 54 cold-storage members, have placed upon record its assent to a bill regulating cold storage—that is, any reasonable one. We are in favor of the inspection by government officials. There is no objection on our part to many of the conditions in the present bill, but we think it entirely inadequate. We believe that the condition of food going into cold storage is the one thing that ought to be inquired into most.

The CHAIRMAN. You would be in favor, then, of the proposed amendment requiring the condition of the food, when it goes into cold storage, to be subject to inspection?

Mr. READ. Certainly; and I think it would be more valuable than any provision in the bill.

The CHAIRMAN. And also in connection with that, a statement—if it goes into cold storage—a statement of the length of time since it was killed?

Mr. READ. It ought to be marked, if it is marked at all, the date of its killing.

The CHAIRMAN. The killing, and the going into cold storage?

Mr. READ. Yes, sir. We have no objection to any fair method; that is, economical method, I should state, and mark the goods that go into cold storage; that can be carried through the cold storage to the consumer, but we doubt very much the ability of the marks to be carried through to the consumer.

The CHAIRMAN. Well, that is a detail probably that would have to work out, but what have you to say as to the quantity in cold storage.

Would you have any objections to giving the quantities of commodities in cold storage at given periods?

Mr. READ. There is no objection to it whatever. In fact, it is done at the present time, and has been done for the past ten years.

The CHAIRMAN. Yes, by your association. I have seen some of your reports.

Mr. READ. We make a comparative report every month from thirty-two houses of the amount of butter and eggs that go into cold storage.

The CHAIRMAN. Can you give us an estimate of the length of time that meat stays in cold storage under different circumstances and the different periods?

Mr. READ. No, sir; I can not.

The CHAIRMAN. What is the longest time that meat is kept in cold storage, approximately, as far as you know?

Mr. READ. Well, it would only be my opinion, and I should say six months.

The CHAIRMAN. Well, some is kept there longer?

Mr. READ. I suppose accidentally, it is true; but I think that if those pieces of meat that are kept there were traced up you would find that it was accidental. For instance, we have in the warehouse business, in all forms of warehouse business, left-overs—things that the owners forget and leave in storage, and sometimes they are found. Now, we represent—I would like to make that emphatic—we represent the public cold-storage houses of the country, not the packers.

The CHAIRMAN. For hire.

Mr. READ. For hire.

The CHAIRMAN. You do not own the commodity?

Mr. READ. We don't own the commodity. We are cold-storage people, renting space to whoever comes in.

The CHAIRMAN. And you don't know when it is taken out where it goes, nor how long it is kept in other cold-storage places?

Mr. READ. We have no right to inquire.

The CHAIRMAN. And you don't?

Mr. READ. And we don't.

The CHAIRMAN. So you simply speak for the cold-storage establishment that rents space?

Mr. READ. Yes, sir.

The CHAIRMAN. And you say about six months is the time?

Mr. READ. Ordinarily I should say meat was kept about six months, and the large proportion of it for much less than that.

The CHAIRMAN. Beef?

Mr. READ. Beef.

The CHAIRMAN. No difference between beef and pork and sheep?

Mr. READ. I don't think so.

The CHAIRMAN. They average about the same?

Mr. READ. Yes, sir.

The CHAIRMAN. Have you any idea how much meat is carried in cold storage in the public warehouses of the United States?

Mr. READ. No, sir.

The CHAIRMAN. I think you publish a pamphlet that I had on my table at the last hearing—I don't seem to have it now—in which you had given some estimate of the amount of meat in cold storage?

Mr. READ. There is a publication, not by our association, but by a paper, "Refrigeration and cold storage in Chicago," in which that is given.

The CHAIRMAN. The American Warehouse Association——

Mr. READ. That is butter and eggs only, Senator.

The CHAIRMAN. What?

Mr. READ. That is butter and eggs only.

The CHAIRMAN. I find on page 957, under date of April 6, 1910, a table, after having given itemized statement—all these various materials in the 30 cold-storage warehouses—there are 30 public storage warehouses, are there not?

Mr. READ. Yes, sir.

The CHAIRMAN. It would seem from this statement that you carried 11,279,791 pounds of butter in cold storage on March 1 of this year, and that you carried on April 1, 4,818,717 pounds. Now, that was all stored for hire, was it?

Mr. READ. That is all storage for hire.

The CHAIRMAN. So there was taken out of cold storage about 7,000,000 pounds of butter in the month of March?

Mr. READ. Yes; butter comes into the cold-storage houses in June and after, and goes out when the supply——

Senator OLIVER. When it gets scarce?

Mr. READ. We can give you, Senator, the report for the whole year, if you would like it.

The CHAIRMAN. This is already before the committee, and will be in the report.

Mr. READ. That is only for one month. We can give you that for every month of the year, if you would like it.

The CHAIRMAN. We would like very much, Mr. Read, if you would hand us a table showing the amount of cold storage for each month of the year.

Mr. READ. We will do that with the houses from whom we get reports.

The CHAIRMAN. Now, what proportion of the public cold-storage houses of the United States is represented by these thirty?

Mr. READ. Well, it is a small proportion. They are most of them large houses. The public cold-storage houses of the country amount to some hundreds—I don't know just what, but the only value of that table, Senator, is simply the comparison from one month to the other.

The CHAIRMAN. There is another value, Mr. Read, in this table, without being argumentative—it indicates the ingoing and outcoming, as it would affect the market. You can readily see that. The market, of course, is controlled by the amount that is released as compared with the general product of an article.

Mr. READ. Yes; but when you consider that only about 4 to 6 per cent of the butter and poultry and eggs that are produced in the country go into cold storage——

Senator OLIVER. It may give the surplus, though. You put 4 or 6 per cent additional product on the market in any one month, and that will put the price down.

Mr. READ. Well, we will give you some evidence on that from men who know more than I do about it.

The CHAIRMAN. You are familiar with this table, and would you object to putting this table in in connection with your testimony?

Mr. READ. Not at all. We are here to aid your committee, instead of opposing it.

The CHAIRMAN. Now, then, the list of cold-storage plants—this is an official publication and this will go into the record. It is the Bureau of Animal Industry, April 4, 1910. We will read it into the record; the statement here is a complete list, so far as the meat-inspection department gives it in the United States.

Mr. READ. A public statement?

The CHAIRMAN. Yes. That is, there are other cold-storage plants, but that is the meat inspection. Now, how long do you carry eggs in cold storage, as a rule?

Mr. READ. The commercial usage is from April to about February, and the tables will show that is true.

The CHAIRMAN. Well, April to February; about nine months?

Mr. READ. Yes, sir.

The CHAIRMAN. That is about the usual period of carrying eggs in cold storage?

Mr. READ. Yes, sir.

The CHAIRMAN. You don't make any inspection of condition of the articles that are there on hire, do you?

Mr. READ. Well, I am not engaged in the business of cold storage, but I know that no very close inspection can be made, because they come in in packages of all kinds, and the reputable warehousemen always reject anything that looks as if it were bad from its outside, but they have no power to go inside.

The CHAIRMAN. You make no inspection?

Mr. READ. No, sir.

The CHAIRMAN. Now, would you object to an inspection of the articles when they come in?

Mr. READ. We favor it.

The CHAIRMAN. You favor it?

Mr. READ. Yes, sir; we think it worth more than anything in your bill.

The CHAIRMAN. I have here a publication entitled "Cold Storage: Its Effect upon the Production and Market Value of Butter, Cheese, Eggs, and Dressed Poultry, etc.," by Frank G. Urner.

Mr. READ. Well, Mr. Urner is present, and can answer questions as to that.

The CHAIRMAN. Then we will defer that until Mr. Urner comes on. Do your establishments give more than casual inspection to meat—to the condition of meat when it comes into cold storage?

Mr. READ. We store very little meat—the public storehouses of this country.

The CHAIRMAN. What would you call very little?

Mr. READ. I mean in proportion.

The CHAIRMAN. But still it is a large item in the aggregate?

Mr. READ. Not a large item in proportion to the goods that we store.

Senator OLIVER. I presume a large proportion of the meat is stored in private houses?

Mr. READ. Yes, sir; no question about that.

The CHAIRMAN. But you don't mean to say that the amount stored is a trifling amount?

Mr. READ. Well, it wouldn't amount to 10 per cent.

The CHAIRMAN. Of the amount stored in the United States?

Mr. READ. It wouldn't amount to half of 1 per cent of the goods stored.

The CHAIRMAN. Now, do you receive fish and oysters, and things of that kind?

Mr. READ. Some of the houses store fish.

The CHAIRMAN. To a very large extent?

Mr. READ. Some of them largely.

The CHAIRMAN. How long does the fish remain in cold storage?

Mr. READ. I do not know; I can not answer that question.

The CHAIRMAN. Is there anyone representing cold storage here that will be able to give us information?

Mr. READ. Yes, sir. Commercial usage takes everything out as a rule, before the year is up.

The CHAIRMAN. Well, when it goes from your cold-storage plant, does it go to other cold-storage plants at times, or have you any means of knowing?

Mr. READ. Sometimes.

The CHAIRMAN. You ship it to other cold-storage plants under instructions?

Mr. READ. Some of the western houses ship east.

The CHAIRMAN. What do you mean by western houses? That is a relative term.

Mr. READ. It is, indeed; Chicago, for instance.

The CHAIRMAN. Then, they ship east to your cold-storage plants?

Mr. READ. Yes.

The CHAIRMAN. And you do not know how long it has been in cold storage before it comes to you?

Mr. READ. No.

The CHAIRMAN. You are a distributing center, as it were, are you?

Mr. READ. Generally.

The CHAIRMAN. Well, you receive goods that have come from other cold-storage plants?

Mr. READ. Yes, sir.

The CHAIRMAN. And do you make any inquiry as to how long they have been in cold storage?

Mr. READ. I would rather you would ask that of Mr. Horne, who is actively engaged in the business. He can tell you.

The CHAIRMAN. You don't know?

Mr. READ. No.

The CHAIRMAN. They might have been in cold storage a short or a long time, and then you might ship to other cold-storage plants. You only know as to the time it is in your own cold-storage plant?

Mr. READ. That is all.

The CHAIRMAN. Well, do you have any inspections on it—any system of inspection there when you take it in or send it out?

Mr. READ. No.

The CHAIRMAN. You wouldn't object to it?

Mr. READ. Not at all.

The CHAIRMAN. Would you object, and would it interfere with your business, to require the parties sending you cold-storage products to be compelled by you to state how long it has been held in cold storage by them?

Mr. READ. You mean, to reject the product unless they did?

The CHAIRMAN. No; for information.

Mr. READ. For information, no.

The CHAIRMAN. Not as a police measure, but in order that your record might be extended; you wouldn't object to that?

Mr. READ. Not at all.

The CHAIRMAN. You see no practical reason why it could not be done?

Mr. READ. No, sir.

The CHAIRMAN. So that you might have a record.

Mr. READ. We have no objection to the marking of the goods when they go into cold storage, and that would carry the record through to the cold-storage house.

The CHAIRMAN. Yes, if you also included in your marking—in your label—the record that comes to you.

Mr. READ. Well, if it was marked on the packages, it ought to be put on.

The CHAIRMAN. Then you would put an additional mark as to when you received it?

Mr. READ. Yes, sir.

The CHAIRMAN. And the first storage then, might, without any interference of trade, so far as you know—might stamp the date of the killing on it, killed on a certain date, cold storage at the place, naming it?

Mr. READ. The warehousemen have no objection to those things; the consumer might have.

The CHAIRMAN. It wouldn't interfere with the business of the country at all?

Mr. READ. I don't think it would.

The CHAIRMAN. You say it would not?

Mr. READ. It might probably make your product cost a little more; the cost of inspection; that would be charged up to product.

The CHAIRMAN. Is there any other statement you desire to make?

Mr. READ. There is one point in this bill we would like to have amended. The period in which goods can be kept is stated arbitrarily as one year. There are a great many goods that go into cold storage that are not kept one year, and butter and eggs and meat could very well come under that provision. I would say eggs and poultry and meat and all meat products could very well come under that provision, but there are certain articles, not generally known, going into cold storage that ought to be exempt from that provision, we think, such as dried fruits, peas, beans, macaroni, especially all the dried fruits. Fruits are dried—for instance, evaporated peaches—when there is a very great overcrop of fruit raised for the market. It might be two, three, four, five, six, or seven years that those fruits are put into cold storage to keep them from vermin, from worms. There is no reason why those fruits, why those things should not be just as good at the end of the year, and they are not kept there in restraint of trade; there is no reason why a provision should not be made in this bill to allow the Department of Agriculture, if that department has the control, to give a permit to allow those goods to remain longer than the year.

The CHAIRMAN. You think that class of goods should be exempt from the arbitrary requirement that they should not be in cold storage more than a year?

Mr. READ. Yes, sir.

The CHAIRMAN. Well, the committee would consider that favorably, probably.

Mr. READ. We are going to give you a list of the goods that are kept in cold storage, and they are surprising to people that are not conversant with the cold-storage business. Here is a list—fish for bait, for instance. You, by an arbitrary rule, injure your fishermen of this country. I will read a few of these:

Poultry, fish for bait, oranges, pears, berries, figs, apricots, citron, confectionery, spinach, cabbage, onions, parsnips, butter, provisions, rice, beer, sirup, gutta percha, solder, preserves, grape fruit, oils, furs, leeks, clams, honey, chestnuts, hams, peaches, anchovies, cherries, dried fish, holly, peppers, rhubarb, sweetbreads, sponges, herbs, dried meats, game, oysters, lemons, cranberries, California fruits, dates, evaporated peaches, currants, peas, potatoes, lettuce, asparagus, horseradish, cheese, flour, macaroni, currants, condensed milk, fruit juices, jellies, pickles, salad dressing, maple sirup, woolens, parsley, shrimp, crabs, bananas, cream, hops, sauerkraut, caviare, smoked fish, eggplant, laurel leaves, radishes, mushrooms, olive oil, wine, pickled meats, food fish, fresh meat, fresh apples, raisins, prunes, evaporated apples, nuts, peas, carrots, turnips, squash, melons, eggs, cereals, peanuts, plants, canned meats, yarn, apple waste, cauliflower, oleomargarine, maple sugar, skins, shallots, scallops, lobsters, buckwheat, cucumbers, lard, sausage casings, brussels sprouts, pickled fish, limes, smilax leaves, pineapples, string beans, olives, candied fruits, and smoked beef.

The CHAIRMAN. You have no estimate of the quantities of those articles?

Mr. READ. No, sir; no reports of quantities.

The CHAIRMAN. Would it be convenient to obtain an additional statement as to the quantities, approximately, of those?

Mr. READ. I think it would be impossible.

The CHAIRMAN. Then proceed.

Mr. READ. We could obtain it perhaps from our own houses, but we don't control beyond those.

The CHAIRMAN. Well, would it be very inconvenient to obtain it from your own houses? We would like to know for a year in each of those lines; that is more important perhaps than it appears. The question as to the month during which those items accumulate and are released is very important, considering the relation as compared to the market.

Mr. READ. I do not believe we could give you any satisfactory data in regard to it.

That list was handed us by the Quincy Market, of Boston, one of the largest in the world, and I think there would be no trouble in getting the amount that they stored in any one year of those articles, but that is about as far as you could go.

The CHAIRMAN. Now, do you deal with the prices; do you know the value of prices placed upon those different classes of goods?

Mr. READ. We do not deal in prices.

The CHAIRMAN. You do not require any statement as to value?

Mr. READ. We know the market; that is all.

The CHAIRMAN. Well, can you give us the market for a year running through those items?

Mr. READ. Yes, sir; Mr. Horne has prepared a statement of that.
The CHAIRMAN. We would like to have a table of that prepared.
Mr. READ. Yes, sir; Mr. Horne has prepared it.
The CHAIRMAN. Now, we would be glad of any further suggestions that you might wish to give us.
Mr. READ. I do not know, Mr. Chairman, that I have got any further suggestion to make. The other gentlemen will answer any questions that you may desire to ask, and I will, so far as I can.

STATEMENT OF HOMER M'DANIEL, OF CLEVELAND, OHIO.

The CHAIRMAN. Will you please give your full name to the stenographer?
Mr. MCDANIEL. Homer McDaniel.
The CHAIRMAN. Where do you live?
Mr. MCDANIEL. Cleveland, Ohio. I am the treasurer and manager of the Sheriff Street Market and Storage Company; I am president of the American Warehousemen's Association.
The CHAIRMAN. Can you tell us or furnish us with a table of the amount of the several items contained upon that list that is carried during each month of the year?
Mr. MCDANIEL. By all the houses, you mean?
The CHAIRMAN. By your houses.
Mr. MCDANIEL. Well, the associated houses?
The CHAIRMAN. Yes; the American Warehousemen's Association houses.
Mr. MCDANIEL. I rather think they would all agree to give their holdings.
The CHAIRMAN. We would be glad if you can obtain that for us.
Mr. MCDANIEL. You mean that we get from our 32 associated houses what they carry during the year of those items?
The CHAIRMAN. Each month.
Mr. MCDANIEL. At the end of each month?
The CHAIRMAN. Yes.
Mr. MCDANIEL. Some of these houses don't carry all those articles, but I think our houses would report on that; we will try and get it for you.
The CHAIRMAN. Now, what have you to suggest in regard to the provisions of this bill?
Mr. MCDANIEL. Well, I do not mean to say much about this, Mr. Chairman. It seems the bill should define cold storage.
The CHAIRMAN. Now, will you give us some suggestions as to the basis on which that definition could be based?
Mr. MCDANIEL. Well, it is rather a difficult question.
The CHAIRMAN. Well, what would you suggest?
Mr. MCDANIEL. When you ask what is cold storage—the animal buries his surplus meat in the ground—cold earth, to save it. Then we have cold storage in that form, and we have the cellar; we have the dugout; we have the old original ice house, that has come down to us, and finally we come to the modern mechanical refrigeration.
The CHAIRMAN. What proportion of your cold storage would probably be under each of those classes?
Mr. MCDANIEL. They would all be cold storage in one sense and in another sense they would be warm storage.

The CHAIRMAN. How much of it is kept in ice houses?

Mr. MCDANIEL. None, of this association, but your bill provides for all the people of the country that are in this business.

The CHAIRMAN. Well, we will take the mechanical cold storage; how would you define it as to method?

Mr. MCDANIEL. The usual form is by ice machinery, in the use of ammonia for extracting heat units from bodies; that is the form.

The CHAIRMAN. What is the principal method—ice?

Mr. MCDANIEL. Mechanical refrigeration.

The CHAIRMAN. By "mechanical" what do you mean?

Mr. MCDANIEL. It is made from clay and steam.

The CHAIRMAN. State the mechanical process.

Mr. MCDANIEL. You take the ammonia—it is allowed to expand in these rooms, and it takes out the heat as it is converted——

The CHAIRMAN. Replaces the heat?

Mr. MCDANIEL. It takes the heat units out of the room and reduces the temperature thereby. Of course, the ice machine is nothing more than a gas pump, pumping the hot gas to the condensers. The condensers take the heat out and use it over again. It is the same process over and over; it is known as a mechanical or artificial refrigeration.

The CHAIRMAN. Cold storage, as generally understood, I suppose, you mean a mechanical process by which you either extract the heat from the room and force in the cooler conditions of the ice refrigeration——

Mr. MCDANIEL. That would be—this simply says "cold storage."

The CHAIRMAN. Well, the cold storage as it is applied to ice houses and dugouts and vaults is not in very general use, is it?

Mr. MCDANIEL. It is considerable, when you consider what is stored in all the farmers' houses of the country; yes. It is a form of storage. You take New York City, for instance, there are a number of very large houses that haven't any mechanical or ice refrigeration.

The CHAIRMAN. How do they protect?

Mr. MCDANIEL. They protect with a stove; in other words, they insulate the walls of this building against the outside temperature, and when it creeps through on them they light a stove and get it warm; so, instead of having cold storage, they have a warm storage, and a large percentage of the stuff stored in our own houses, when it is zero out of doors, it is—relatively, it is a warm storage.

The CHAIRMAN. Would you call it a cold storage at all if the temperature was above 32?

Mr. MCDANIEL. It would be cold storage as long as the temperature was 22. A very large percentage of the stuff carried in cold storage must not freeze.

The CHAIRMAN. That of course depends upon the article?

Mr. MCDANIEL. Yes; such as applies, for instance, and all fruits and berries.

The CHAIRMAN. Have you personal knowledge of the cold storage of meats?

Mr. MCDANIEL. Only in a limited way. Our own experience is light, because there is very little meat stored in Cleveland in our house.

The CHAIRMAN. When you receive commodities for storage, do you take any steps to ascertain whether it has been in cold storage, and how long?

Mr. MCDANIEL. No; with us individually the quantity received in that way is very slight.

The CHAIRMAN. Do you receive any meats?

Mr. MCDANIEL. We get no meats except poultry from the West.

The CHAIRMAN. You receive the poultry from the West?

Mr. MCDANIEL. Yes, sir.

The CHAIRMAN, And you have no knowledge, and take no steps to ascertain how long it has been in cold storage, or how long since it has been slaughtered, do you?

Mr. MCDANIEL. No; we haven't any way of knowing.

The CHAIRMAN. From what States in the West do you receive poultry for cold storage?

Mr. MCDANIEL. Well, it comes from Missouri and Kansas and other Western States. If cold storage is shipped to a merchant in Cleveland from a house in Chicago he probably has no knowledge as to where it was packed; it would pass upon its merits.

The CHAIRMAN. It might have come from some other place in Chicago and been in storage there for some time, and then sent to you?

Mr. MCDANIEL. Yes, sir.

The CHAIRMAN. Now, referring to poultry, do you carry large quantities of poultry in cold storage?

Mr. MCDANIEL. In a general way there is quite a large quantity of poultry carried by the storage houses of the country. We are not what you might call heavy carriers of poultry.

The CHAIRMAN. Are you in the nature of distributing houses?

Mr. MCDANIEL. Our house in Cleveland is a local house; the stuff that accumulates there is for local purposes.

The CHAIRMAN. You mean for a local market?

Mr. MCDANIEL. For Cleveland consumption. One of the reasons for that is that we are not on a railroad line; if you were going to reship it you would have to cart it back. It is not an attractive place for large storage.

The CHAIRMAN. Is that a large house?

Mr. MCDANIEL. It is a fair-sized house. It is large compared with some, and small compared with others.

The CHAIRMAN. What is the value of the poultry that you carry in that house?

Mr. MCDANIEL. At our place?

The CHAIRMAN. Yes.

Mr. MCDANIEL. It is light; we do not carry much poultry. Of course, poultry comes in and stays—some of it stays a short time and some a long time. It depends on whether it is a local dealer and he has no way of taking care of it; he sends it over and it may not be there thirty days.

The CHAIRMAN. Give us the maximum of the general run of your business; the maximum time?

Mr. MCDANIEL. The poultry is usually out of the market before fall. If the stuff comes in in November or December, or just after Thanksgiving, which is the time when most of it comes in, it is out of the market by the time the next crop comes in.

The CHAIRMAN. In the spring?

Mr. McDANIEL. No; in the fall. Poultry that is in cold storage now is for this summer's consumption.

The CHAIRMAN. When would it be placed there?

Mr. McDANIEL. Last fall.

The CHAIRMAN. Placed there for this summer's use?

Mr. McDANIEL. Summer and winter.

The CHAIRMAN. Now, is there an unusual amount of poultry placed back in cold storage after the holidays, that was taken out for the holiday trade and not sold—left over from the holiday trade?

Mr. McDANIEL. You mean frozen poultry?

The CHAIRMAN. Well, you can give it frozen and otherwise.

Mr. McDANIEL. Why, the poultry that is intended for Thanksgiving and Christmas—there is very little that is frozen poultry; the freezing hasn't commenced then.

The CHAIRMAN. And the left over from that market goes to cold storage?

Mr. McDANIEL. If there was a slow market, and a cold-storage market had been overcrowded, if they were unable to dispose of it, that surplus would go to cold storage in order to save it. Otherwise it would spoil.

The CHAIRMAN. That is carried open during that season and then placed in cold storage?

Mr. McDANIEL. Why, yes; this stuff is prepared to reach market, and it depends upon where it is produced. If a Kansas man is producing turkeys for New York, he has to start them from Kansas earlier than a man would from Pennsylvania, but they all endeavor to get their stuff there two or three days before Christmas. If the market does not demand all of it, they are put in cold storage.

The CHAIRMAN. Well, had it been in cold storage before the holiday trade?

Mr. McDANIEL. We have never seen any that was.

The CHAIRMAN. How is it kept during this trade—open?

Mr. McDANIEL. Well, some of it is shipped in ice, in barrels, and crushed ice with it, by express, and by fast freight if it is not too long a haul; in refrigerator cars.

The CHAIRMAN. Is there not a large quantity that comes from the cooler that is not frozen at all before it goes on the holiday market?

Mr. McDANIEL. I don't know; my experience is that there is no frozen poultry on the market during the holiday trade.

The CHAIRMAN. That is killed in the fall?

Mr. McDANIEL. It is killed just prior to the holidays, a day or two before, long enough to get into the market in good condition.

The CHAIRMAN. It arrives on the market and is hung up in the stalls—a good deal of it?

Mr. McDANIEL. It would ordinarily be carried in small refrigerators; I am speaking of the wholesale market, where a man may have two or three hundred barrels of turkeys, and don't sell all of them; he would put them in storage.

The CHAIRMAN. Those turkeys would be packed in the barrels after killing and not frozen at all?

Mr. McDANIEL. That is the way they come to us.

The CHAIRMAN. And they come to you in the barrels, because there was no market for them?

Mr. McDANIEL. Yes, sir.

The CHAIRMAN. And you place them in cold storage?

Mr. McDANIEL. Yes, sir.

The CHAIRMAN. Now, when do you find the next market for that product that you place in cold storage?

Mr. McDANIEL. Well, if there was surplus at Thanksgiving time, if the market would warrant it, the overflood would probably be sold at Christmas time along with the fresh stuff that would come in.

The CHAIRMAN. And if it was not sold during that period it would go in cold storage about January?

Mr. McDANIEL. Yes, sir.

The CHAIRMAN. I think the records of your association and of others show that the larger deposit of chickens, turkeys, and that class of goods is in January?

Mr. McDANIEL. That is, after the holidays.

Mr. READ. Are there any statistics?

The CHAIRMAN. We have statistics and some testimony.

Mr. McDANIEL. After the holiday trade is over then the regular packers that make a business in dealing in poultry commence packing for the freezing.

The CHAIRMAN. And they find a market about what time of year, the next fall?

Mr. McDANIEL. Immediately after it is packed; it is ready for market if there is a market for it.

The CHAIRMAN. When does it really find its market?

Mr. McDANIEL. As the consumption demands. For instance, at the present time, with chickens—live chickens—at 20 cents, they are finding a pretty ready market for it.

The CHAIRMAN. For your cold storage?

Mr. McDANIEL. Yes; the crop is light.

The CHAIRMAN. You carry a considerable portion of that cold storage over into the summer months, I suppose?

Mr. McDANIEL. It is packed for that reason, to carry it over toward the next fall.

The CHAIRMAN. Well, that is carried over to the next fall?

Mr. McDANIEL. When I say carried over to the next fall, it is supposed to be out by the next crop. Then you can commence to get fresh birds.

The CHAIRMAN. Is it not true that there is a very considerable quantity of it that is carried over to the next fall?

Mr. McDANIEL. Not intentionally.

The CHAIRMAN. But as a matter of fact, I mean?

Mr. McDANIEL. Well, I haven't any way of knowing just how much; there may be more one season than another.

The CHAIRMAN. Do you keep any record of the values that you carry over, or that you have on hand, rather, from the season before, when you begin to send it out for the fall trade?

Mr. McDANIEL. No; I have never kept it; it is extremely light; it is very expensive to carry stuff over, and there is very little carried over.

The CHAIRMAN. But it is carried over?

Mr. McDANIEL. I imagine it is at times; I do not know whether it is carried over by our houses.

The CHAIRMAN. Not in any of your houses?

Mr. McDANIEL. I couldn't say.

The CHAIRMAN. Would it be possible to have a statement as to the amount of turkeys, chickens, etc., that are carried over from one year to another?

Mr. McDANIEL. Well, we have never attempted to get any statistics from our associated houses save as to butter and eggs. Now, I couldn't make a promise with regard to that, sir, without the consent of all. If they wished to give that information, why, I would be glad to give it to you; we might try for it. Mr. Read is the secretary and he can write to them and ask them about it.

The CHAIRMAN. It would assist us very much to know that fact. Now, all of this stuff, as I understand it, is undrawn. You carry no drawn poultry?

Mr. McDANIEL. Scarcely any.

Mr. READ. The difficulty, Senator, if I may interrupt, in getting statistics of that kind, is the fact that they come to the storage houses in barrels, in boxes, and different size crates, and they take no account of weights in the warehouses; the space is rented for so much per barrel, or so much per case. It would be very difficult, and I doubt if the figures are exact; I don't think they are anywhere that they could be obtained. With butter and eggs we get the statistics very easily, because the case of butter is a 60-pound case, and a case of eggs is a 30-dozen case, and it is a question simply of multiplication.

The CHAIRMAN. Now, let us pass to eggs. At what season of the year do you receive the largest quantity of eggs?

Mr. McDANIEL. During the months of April and May.

The CHAIRMAN. Now, how long do you carry those; I do not mean all of them, because I suppose they go out gradually, but what is the maximum time that you carry thoses eggs?

Mr. McDANIEL. Well, there are very few eggs ever left in storage after the 1st of February; a very small percentage of the total holdings would be in February 1. Many times I have seen our houses—I think the record will show—in the time we have kept this report, they were practically empty the 1st day of January. I have seen it that way in our own house over and over again the 1st day of January.

The CHAIRMAN. That would be eggs put in in the spring before?

Mr. McDANIEL. April and May.

The CHAIRMAN. But you do carry them for longer than that, overlapping a season, do you?

Mr. McDANIEL. We can carry them up to the 1st of March.

The CHAIRMAN. Now, what do you do with them when you carry them to the 1st of March; do you have to depend on the market, or do you turn them over for some special treatment or other?

Mr. McDANIEL. The eggs are not our eggs.

The CHAIRMAN. I know; but you probably have some knowledge as to the use that is made of eggs that have been held in storage?

Mr. McDANIEL. The only thing I know from my own knowledge is that the bad eggs go to the dump. I have never seen anybody yet that had the ability to sell a rotten egg.

The CHAIRMAN. They are not treated in connection with any of your establishments?

Mr. McDANIEL. No.

The CHAIRMAN. Now, then, your associates have no other establishments than those which have been described for merely carrying

the product? Do you have any establishments for keeping the hold-over or left-over product?

Mr. McDANIEL. No, sir; none at all, and I know of none, either.

The CHAIRMAN. You carry it until it is taken out; it doesn't make any difference how long, as long as they pay the storage?

Mr. McDANIEL. I didn't say that, did I?

The CHAIRMAN. It is a question I am asking.

Mr. McDANIEL. No; if we find that any article in our house, shows from any experience that we may have in handling it, that it is not keeping well we immediately take it up with the owner and see that it is disposed of.

The CHAIRMAN. That is quite an important answer, and I would like to have that followed up. You take it up with the owner, and you notify him that his goods are not keeping well?

Mr. McDANIEL. For instance, I can cite a case. A man put in three cars of celery recently; one of those cars didn't keep. It was reported, and we looked into the matter and said, "We must report this celery to this man; if he don't move it soon he will have no celery." I talked with the man and I said, "This celery must have been exposed somewhere before it got into the storage." "Well," he says, "I guess it was, otherwise why don't it keep like the other two cars?" Now, there was a case where we had no interest except the storage. We didn't want the stuff to spoil in our house just to get a storage charge out of it.

The CHAIRMAN. What did this man do with that car of celery?

Mr. McDANIEL. He moved it immediately—that week.

The CHAIRMAN. What did he do with it?

Mr. McDANIEL. Probably sold it on a Cleveland market.

The CHAIRMAN. Give us some instances in regard to eggs that you notified those parties storing them that the eggs were not keeping?

Mr. McDANIEL. Well, I don't think there has been anything of that kind ever happen.

The CHAIRMAN. You never did notify anybody to remove eggs because they were not keeping?

Mr. McDANIEL. Never did unless we had a loan on them. I told them they better commence moving some of those eggs or they wouldn't have any.

The CHAIRMAN. You have had occasion to do that?

Mr. McDANIEL. Quite a number of times.

The CHAIRMAN. Now, about poultry. Have you had occasion to notify anybody that their poultry was not keeping?

Mr. McDANIEL. Our storage on poultry is so light that I am scarcely an authority. Mr. Horne here has had a very large experience and can follow me at your disposal.

The CHAIRMAN. If the poultry remained with you a year, would you notify the man that he must take it out?

Mr. McDANIEL. Your question would indicate that the stuff is in our place and spoiled, and you want to know what we would do with it?

The CHAIRMAN. Yes, sir.

Mr. McDANIEL. We simply send our men in there and send it down to the dump and quarrel with that man afterwards that owns it. If he won't attend to his own business we attend to it for him.

The CHAIRMAN. You dump it out?

Mr. McDANIEL. Simply send it to the garbage.

The CHAIRMAN. It is not placed on the market?

Mr. McDANIEL. Not permitted to, if we can prevent it.

The CHAIRMAN. But if you notified him that it was spoiled and he takes it away, why, after that you know nothing about it?

Mr. McDANIEL. I have no way of knowing.

The CHAIRMAN. When you notify them they generally take it away, don't they? They seldom allow you to throw it away?

Mr. McDANIEL. Well, the quantity would be so small it is just as explained, where men have forgotten stuff. A man put in some fine quail, and went South and we never could find him—couldn't find the man that owned the quail—and you might ask what did we do with those quail. We burned them up in the boiler. Those are exceptional cases.

The CHAIRMAN. Is there any further statement that you desire to make?

Mr. McDANIEL. Not at this time.

STATEMENT OF FRANK A. HORNE, OF NEW YORK CITY.

The CHAIRMAN. Will you please state your name?

Mr. HORNE. Frank A. Horne. I am secretary of the Merchants' Refrigerating Company of New York, and the Merchants' Refrigerating Company of New Jersey, two corporations; I am also chairman of the cold-storage committee of the American Warehousemen's Association.

The CHAIRMAN. You have under your supervision, or within your knowledge, the cold storage of meat?

Mr. HORNE. To a very limited extent.

The CHAIRMAN. Can you give us an idea of what you term a "limited extent?"

Mr. HORNE. Why, I do not know as I can give you any figures as to that, but we do not regard meat storage as at all important in our business. Most of the meat storage is done west, and by the packers themselves in their own private plants. It is merely incidental that we receive any at all.

The CHAIRMAN. Poultry you handle in large quantities?

Mr. HORNE. Yes, sir.

The CHAIRMAN. About how much poultry do you handle in your cold storage?

Mr. HORNE. I can give you the maximum number of packages that we had this year; I have the figures here, if you would like it. In our Jersey City warehouse, our maximum quantities of poultry and meat were——

Senator OLIVER. Mostly poultry?

Mr. HORNE. The maximum quantity in our Jersey City warehouse was on January 31, 1910, at which time we had 63,082 packages of poultry and meat.

The CHAIRMAN. About what do you mean by a package? Poultry for instance?

Mr. HORNE. It varies very greatly.

The CHAIRMAN. In poultry?

Mr. HORNE. Yes, sir. Broilers, for instance, are packed in small packages, 20 or 30 pounds, and turkeys are packed in barrels, weigh-

ing 200 to 250 pounds; I should say an average of about 100 pounds to a package would be a fair average. In addition to that we had in our New York house on January 22, 1910, 29,584 packages.

The CHAIRMAN. Packages of what?

Mr. HORNE. Poultry and meat.

Senator OLIVER. What date was that?

Mr. HORNE. January 22, 1910. Those were our maximum holdings of poultry.

The CHAIRMAN. Now, what is the difference shown between January 1 and January 22?

Mr. HORNE. Well, I haven't those figures. I simply have the maximum figures here. It would be approximately the same thing.

The CHAIRMAN. Do you receive into cold storage poultry that has been exposed on the holiday market?

Mr. HORNE. If we do, it is to a very limited extent. It might possibly be done, but not commercially done. I suppose 95 per cent of it has been expressly packed in the West for the purpose of freezing, or had been frozen in some other houses West before it came to us.

The CHAIRMAN. You are giving the figures which would represent the date when this poultry was received by you?

Mr. HORNE. In these figures, Senator, are the maximum pounds that were in our warehouse.

Senator OLIVER. The largest quantity that you had on hand at any one time?

Mr. HORNE. Exactly, during that period.

The CHAIRMAN. How long do you carry poultry in cold storage?

Mr. HORNE. On an average, I would say, it would be about four months.

The CHAIRMAN. When does the poultry that you receive in January return to the retail market?

Mr. HORNE. Why, it commences to move within a month, and continues steadily, according to the demands of the market until the summer and the late fall.

The CHAIRMAN. Following?

Mr. HORNE. Yes, sir.

The CHAIRMAN. You carry large quantities of eggs?

Mr. HORNE. Yes, sir.

The CHAIRMAN. About what quantities?

Mr. HORNE. I can also give you our maximum quantities on eggs if you would like to have them. In our Jersey City warehouse our maximum quantity last year was, in July, 259,000 cases, in round numbers. In our New York City warehouse, in September, 158,900 approximately.

The CHAIRMAN. You haven't the amount in the New York warehouse at the same time—on the same date as you have given for the New Jersey house?

Mr. HORNE. No, sir; the clerk simply prepared the maximum holdings in each case. I have another table here which will be of interest, doubtless. It shows the movement of goods in our warehouses for an entire year by months, both as to receipts and deliveries, giving clear evidence of the free movement of goods, according to season, and according to market conditions. This is classified as to eggs, poultry, and meats, butter, cheese, green fruits, dried fruits, etc.

The CHAIRMAN. We would be glad to have you put that into the record in connection with your testimony.

Mr. HORNE. I have that for both houses.

The CHAIRMAN. Now, you are dealing here altogether with packages, of course?

Mr. HORNE. Altogether with packages.

The CHAIRMAN. We will not stop now, except for the purpose of your examination, to go into these figures because we will have them before us, and take them up in our executive session for consideration. Do you make any inspection or determination as to the quality and condition of the goods when they go into your storage houses?

Mr. HORNE. Only to a limited extent; quite superficial, and a cursory examination.

The CHAIRMAN. Nor when they go out?

Mr. HORNE. No, sir; nor when they go out. In the volume of business it would be quite impossible.

The CHAIRMAN. Well, would you consider that it would be detrimental to free commerce and to your business to have an inspection of the articles when they go into cold storage in your houses, and when they are taken out?

Mr. HORNE. On the contrary, we heartily favor inspection, particularly when they come in. If they come in right, they will go out right.

The CHAIRMAN. Now, would it be practicable for your house to require under storage houses from which you receive these goods to state the length of time they had been in cold storage with them?

Mr. HORNE. Well, we would have no authority to compel them to do that.

The CHAIRMAN. Would you object to furnishing the committee with the names of storage plants or places from which you receive goods in order that the committee might pursue the question back further?

Mr. HORNE. That would be quite difficult, Mr. Chairman.

The CHAIRMAN. The principal ones?

Mr. HORNE. Well, for this reason: It would be difficult because our dealings are not with other cold-storage concerns, but with the owners, and we have no prior knowledge necessarily of their former place of storage or their point of storage except as is incidental to railroad information, and so on.

The CHAIRMAN. Would it be inconvenient for you to keep a statement received from the teamster and the facts in regard to the article as to whether they came from cold storage, and how long they had been there, or storage of any kind?

Mr. HORNE. We haven't done it hitherto.

The CHAIRMAN. Would it be detrimental to your business?

Mr. HORNE. No, sir.

The CHAIRMAN. Then it would not be an unreasonable provision at all to keep a record of those shipments?

Mr. HORNE. Do I understand you to mean a record as to dating on the packages themselves or a record on the books?

The CHAIRMAN. A record on your books, and I suppose if we enact a statute here it will require that the other parties will comply with the provisions of the law.

Mr. HORNE. We will be glad to comply with any provisions.

The CHAIRMAN. And keep on your books a statement?

Mr. HORNE. We could do that; it would entail some additional labor.

The CHAIRMAN. You could do that?

Mr. HORNE. It could be done.

The CHAIRMAN. Both as to poultry and eggs?

Mr. HORNE. Yes, sir.

The CHAIRMAN. And, in fact, anything?

Mr. HORNE. Yes, sir.

The CHAIRMAN. So that a provision in the bill requiring such a record to be given to an inspector, if a system of inspection is adopted, would not interfere with your business?

Mr. HORNE. No, sir.

The CHAIRMAN. That is a mere matter of convenience?

Mr. HORNE. Yes, sir.

The CHAIRMAN. You know from the railroad shipping bills the points from which goods come, and of course you know the consignor?

Mr. HORNE. We know usually the point of shipment and the owner.

The CHAIRMAN. Is your trade one of large items generally?

Mr. HORNE. Yes, sir.

The CHAIRMAN. So that the shipments are of considerable importance?

Mr. HORNE. Yes, sir.

The CHAIRMAN. From what States in the West—how far west do you draw your trade; beyond the Missouri River?

Mr. HORNE. Mostly east of the Missouri River.

The CHAIRMAN. The Mississippi Valley?

Mr. HORNE. I should say mostly from the east, and in some cases west.

The CHAIRMAN. How far west do you draw your business?

Mr. HORNE. We get eggs from Missouri, Kansas, and the other States north, in that range; also poultry.

Senator OLIVER. Fruits, I suppose, still farther west?

Mr. HORNE. Fruits—we have a very large business in fruit from the coast.

The CHAIRMAN. Well, how much fruit do you carry in storage from the extreme west; such as oranges, apples, and so forth.

Mr. HORNE. Our own houses carry no oranges or lemons, nor any fish, nor anything that has an odor that would affect dairy products and that class of merchandise, so I can not make any answer as to oranges and lemons or grape fruit, but I can answer as to green fruit, which includes apples and pears. Referring to green fruit, we had in our New Jersey house 28,400 packages and in our New York house 74,000 packages this year.

The CHAIRMAN. That would be bags of fruit?

Mr. HORNE. Bags and barrels.

Senator OLIVER. At one time?

Mr. HORNE. At the high point.

The CHAIRMAN. Now, about butter. How much butter do you carry?

Mr. HORNE. We had about 51,300 packages in Jersey City and 72,900 in New York City.

The CHAIRMAN. How long do you carry butter in cold storage?

Mr. HORNE. Butter is stored in June and carried until approaching the next crop.

The CHAIRMAN. June is the largest——

Mr. HORNE. June, July, and August are the periods of accumulation.

The CHAIRMAN. Now, you are just giving cold-storage houses as an officer of the association. Can you give us any figures as to the entire association—the quantities they carry?

Mr. HORNE. Not any other than the reported figures. I am not an officer; I am simply chairman of the committee.

Mr. READ. I can get you the statement for butter and eggs.

The CHAIRMAN. Now it is approaching the hour of the meeting of the Senate, and I regret we can not go further to-day.

Mr. HORNE. I have some documents I would like to file.

Mr. READ. Mr. Chairman, a member of our association, the president of the Quincy Market cold storage in Boston, the largest in the world, has gone south on business, and he wanted to see if we could get a hearing some time next week.

The CHAIRMAN. We will arrange it on next Thursday. That is the regular meeting day of this committee.

Mr. HORNE. I have a very interesting document which was written by the chief of the dairy division in reference to some pending legislation there which was addressed to a member of the house of assembly of New Jersey, which I think would be interesting, and I will be glad to file it.

(Mr. Horne submitted the following data:)

Maximum holdings.

	Packages.
Jersey City:	
Eggs, July 27, 1909	259,687
Butter, August 31, 1909	51,369
Cheese, October 9, 1909	21,568
Poultry and meats, January 31, 1910	63,082
Dried fruit and nuts, June 7, 1909	45,084
Green fruit, January 3, 1910	44,872
Various, November 16, 1909	26,555
New York:	
Eggs, September 3, 1909	158,906
Butter, August 18, 1909	72,925
Cheese, September 2, 1909	43,947
Poultry and meat, January 22, 1910	29,584
Dried fruit and nuts, January 31, 1910	164,967
Green fruit, December 8, 1909	74,060
Various, July 1, 1909	25,998

Movement of goods in warehouse of Merchants' Refrigerating Company of New Jersey, by months, from April 1, 1909, to April 1, 1910.

[The figures given below represent packages.]

	Eggs.		Poultry and meats.		Butter.	
	Receipts.	Deliveries.	Receipts.	Deliveries.	Receipts.	Deliveries.
1909.						
April	85,019	62	5,650	19,628	.....	3,013
May	106,785	41	8,922	15,035	.....	1,354
June	53,739	604	7,076	12,216	18,662	397
July	9,780	2,751	5,088	8,555	26,471	298
August	3,512	10,474	4,149	7,092	7,560	1,234
September	5,219	22,308	3,978	6,537	2,476	5,090
October	1,167	33,176	5,160	2,707	755	6,356
November	20	61,248	5,769	4,291	340	9,306
December	.....	70,962	22,078	3,866	172	17,335
1910.						
January	10	38,971	30,322	6,142	59	8,330
February	.....	31,621	9,818	14,312	212	4,352
March	5,847	465	7,970	17,868	302	2,911
Total	271,098	272,683	115,980	118,249	57,009	59,976

	Cheese.		Green fruits.		Dried fruit and nuts.	
	Receipts.	Deliveries.	Receipts.	Deliveries.	Receipts.	Deliveries.
1909.						
April	.....	805	.....	2,879	10,006	3,352
May	.....	496	.....	988	10,020	1,291
June	3,780	6	.....	650	7,558	3,757
July	8,099	.....	20,407	6,809	327	2,293
August	5,620	95	3	13,603	75	4,591
September	5,088	1,878	5,688	1	18	9,681
October	3,145	4,495	24,159	1,631	91	11,427
November	.....	3,524	8,927	1,666	.....	1,895
December	.....	2,928	10,510	2,270	.....	3,581
1910.						
January	348	5,004	1,920	5,044	.....	477
February	.....	5,071	.....	13,670	.....	2,279
March	.....	1,955	.....	15,704	2,400	1,127
Total	26,080	26,257	71,614	64,915	30,495	45,751

Movement of goods in warehouses of Merchants' Refrigerating Company, by months, from April 1, 1909, to February 28, 1910.

[The figures given below represent packages.]

	Eggs.		Poultry and meats.		Butter.	
	Receipts.	Deliveries.	Receipts.	Deliveries.	Receipts.	Deliveries.
1909.						
April	31,654	745	7,702	12,409	2,272	5,639
May	47,847	1,544	4,673	12,226	1,127	2,138
June	51,483	3,604	7,549	6,238	40,201	1,594
July	29,303	9,944	10,223	10,058	26,533	3,786
August	18,973	15,636	4,610	6,978	15,695	7,394
September	18,987	26,102	3,628	5,098	9,612	11,156
October	8,431	34,282	6,458	4,884	9,217	13,593
November	3,190	43,847	6,177	7,525	4,255	17,095
December	329	47,145	15,137	4,906	1,374	27,643
1910.						
January	1,286	31,767	6,495	5,786	2,346	13,163
February	15	7,278	6,340	7,881	1,276	6,987
	211,498	221,894	78,992	83,989	113,908	110,188

	Cheese.		Green fruit.		Dried fruit and nuts.	
	Receipts.	Deliveries.	Receipts.	Deliveries.	Receipts.	Deliveries.
1909.						
April	1,607	3,030	1,380	10,602	65,428	40,695
May	963	3,297	114	5,782	77,154	40,650
June	15,983	1,308	292	2,694	53,098	27,664
July	22,412	2,232	2,832	3,584	26,233	32,424
August	12,009	6,799	1,696	668	11,114	36,020
September	8,028	10,339	31,926	7,677	11,292	56,573
October	6,299	17,854	34,019	10,755	23,847	62,897
November	4,932	11,752	32,956	12,013	40,309	37,144
December	1,443	8,295	12,291	16,743	50,058	23,421
1910.						
January	304	6,305	4,538	18,569	59,248	24,110
February	46	6,176	605	18,654	32,095	32,527
	74,026	76,387	122,649	107,741	449,876	414,125

New York egg trade, year ending February 28, 1910, including storage movement in Jersey City, compiled by Urner-Barry Company, publishers of the Producers' Price Current.

	Receipts.	Storage stock first of month.	Storage input or output.a	Consumptive output
1909.	*Cases.*	*Cases.*	*Cases.*	*Cases.*
March	516,141	.....	+ 38,000	440,000
April	636,423	38,000	+224,000	412,000
May	603,583	262,000	+235,000	369,000
June	519,330	497,000	+193,000	326,000
July	364,955	690,000	+ 37,000	328,000
August	325,591	727,000	− 20,000	331,000
September	317,280	707,000	− 47,000	349,000
October	248,143	660,000	− 88,000	351,000
November	177,350	572,000	−159,000	336,000
December	167,929	413,000	−185,000	338,000
1910.				
January	137,408	228,000	−145,000	272,357
February	232,404	83,000	− 82,000	314,400

a +Indicates increase of stock input; −indicates decrease of stock output.

Butter receipts for 1907.

	Packages.		Packages.
January	131,246	August	246,894
February	117,555	September	201,634
March	126,730	October	218,896
April	146,220	November	138,422
May	165,454	December	138,949
June	246,334		
July	287,528	Total for year	2,165,862

Quotations for highest grade of creamery butter for 1907.

	Range of fresh.	Average.	Range of held.
	Cents.	*Cents.*	*Cents.*
January	28 @32	30.80	27 @30
February	32 @33	32.54	30 @31
March	28 @33	30.61	27½@31
April	27 @34	30.69	.....
May	24 @27	25.07	.....
June	23 @24	23.52	.....
July	24 @26	24.81	.....
August	24 @26½	24.88	.....
September	26½@29½	27.81	.....
October	26 @30	28.70	26½@30½
November	24½@28	27.25	25 @28
December	28 @29½	28.87	26½@28
Average fresh for year	.....	27.98	

Butter receipts for 1908.

	Packages.		Packages.
January	153,217	August	238,145
February	155,011	September	234,139
March	145,404	October	169,400
April	150,550	November	131,059
May	200,039	December	145,969
June	317,754		
July	319,402	Total for year	2,361,089

Quotations for highest grade of creamery butter for 1908.

	Range of fresh.	Average.	Range of held.
	Cents.	*Cents.*	*Cents.*
January	30 @33	31.53	28 @31
February	31 @34½	32.88	30½@32½
March	29 @31	29.31	28½@31
April	27 @31	29.07	26 @29½
May	22 @27	24.20	.....
June	22½@24½	23.81	.....
July	22½@23½	22.95	.....
August	21½@24	23.38	.....
September	24 @27	24.50	.....
October	27 @28	27.40	26 @27
November	28 @31½	30.33	26½@29
December	31½@33	32.00	28½@30
Average fresh for year	.....	27.61	

Butter receipts for 1909.

	Packages.		Packages.
January	139,237	August	243,442
February	145,748	September	215,397
March	171,918	October	186,416
April	165,348	November	139,517
May	193,824	December	111,369
June	317,409		
July	293,136	Total for year	2,322,821

Quotations for highest grade of creamery butter for 1909.

	Range of fresh.	Average.	Range of held.
	Cents.	*Cents.*	*Cents.*
January	30 @33	32.20	29 @30
February	30 @32	31.08	29 @30
March	29½@31	30.03	27 @29
April	27 @30	27.98	27 @29
May	26 @29½	27.08	.....
June	25½@27	26.31	.....
July	26 @27	26.73	.....
August	26½@30	27.77	.....
September	29½@32	31.00	30½@31
October	31 @32½	31.60	30½@31½
November	31 @34	31.95	31 @32
December	34 @38	36.05	32 @34
Average fresh for year	.....	29.98	

Egg receipts in 1907.

	Cases.
January	202,598
February	207,130
March	633,093
April	749,666
May	672,747
June	492,501
July	383,208
August	287,448
September	245,648
October	235,381
November	154,662
December	162,531
Total for year	4,426,614

Quotations for finest western eggs for 1907.

	Range of fresh.	Refrigerator.
	Cents.	*Cents.*
January	25 @29	22 @25
February	25 @27½	23 @24½
March	16½@27	.....
April	17 @18½	.....
May	17 @18½	.....
June	16 @17½	.....
July	16 @19	.....
August	19 @22	.....
September	21 @25	20½@21½
October	24 @27½	18 @21½
November	27 @32	18 @20
December	25 @34	18 @19½

Egg receipts for 1908.

	Cases.
January	231,316
February	219,608
March	521,645
April	690,688
May	603,671
June	477,161
July	340,064
August	258,015
September	275,195
October	212,477
November	139,712
December	146,717
Total for year	4,116,269

Quotations for finest western eggs for 1908.

	Range of fresh.	Refrigerators.
	Cents.	*Cents.*
January	22½ @ 30	[a] 17½ @ 20
February	21½ @ 26	18 @ 22
March	15 @ 23	.....
April	15½ @ 17½	.....
May	16½ @ 18½	.....
June	17 @ 19	.....
July	18 @ 21	.....
August	20 @ 23	.....
September	22 @ 25	21½ @ 22½
October	24 @ 30	22 @ 23½
November	27 @ 36	23 @ 26½
December	30 @ 40	26 @ 27½

[a] Loss to holders.

Egg receipts for 1909.

	Cases.
January	177,860
February	201,735
March	516,141
April	636,423
May	603,583
June	519,330
July	364,955
August	325,591
September	317,280
October	348,143
November	177,350
December	167,929
Total for year	4,256,320

Quotations for finest western eggs.

	Range of fresh.	Refrigerators.
	Cents.	*Cents.*
January	29 @ 35	26½ @ 31
February	24 @ 35½	29 @ 31
March	18½ @ 22½	.....
April	21½ @ 25½	.....
May	21½ @ 23½	.....
June	21½ @ 23½	.....
July	23 @ 24	.....
August	23 @ 26	24½ @ 25½
September	24 @ 27½	24 @ 26
October	25½ @ 30	24 @ 26
November	30 @ 37	24 @ 25½
December	31 @ 38	[a] 22½ @ 26½

[a] Loss to holders.

161 CHAMBERS STREET, NEW YORK, *April 2, 1910.*

Messrs. KNAPP & VAN NOSTRAND,
241 Washington street, New York.

GENTLEMEN: We desire to call your attention to the report of the presentment of the Hudson County grand jury as contained in the Jersey City Journal in their issue of April 1, in which it is stated, "As the inexperienced purchaser is often unable to detect the difference between fresh poultry and the cold-storage article by mere inspection, he is not made acquainted with what is undeniably a fact, that in buying the cold-storage product he is paying for from 9 to 14 per cent of water. This condition results from the thawing process accomplished by immersion in water."

We would appreciate it very much if you will make a thorough test of this condition to establish by proper method just how much water, if any, is absorbed by poultry in the thawing process.

We would also like to have the result of this experiment verified by affidavit if possible.

Yours, very truly,

MERCHANTS' REFRIGERATING COMPANY OF NEW JERSEY.
W. WILLS, *President.*

NEW YORK, *April 4, 1910.*

Mr. W. WILLS,
President Merchants' Refrigerating Company of New Jersey,
Jersey City, N. J.

DEAR SIR: In compliance with your request of April 2, to test what weight frozen poultry will increase when thawed out in water, we have taken 100 pounds of hard frozen poultry and let it remain in cold running water thirty-six hours, then taken it out, let the water drain off, reweighed it, and find weight to be 101 pounds, an increase of 1 per cent. The average time frozen poultry is allowed to remain in water to thaw is from twelve to sixteen hours, but we made this test purposely severe. Almost all frozen poultry is thawed by exposure to the natural air, but a small proportion is put in clear cold running water to save time, as cold water draws the frost out more quickly than simple exposure to the air. All of our goods are handled in this manner, and strong weight is always given on poultry thawed in water to allow for any shrinkage before reaching the customer.

Yours, truly,

KNAPP & VAN NOSTRAND,
By DANIEL R. VAN NOSTRAND.

STATE OF NEW YORK, *City and County of New York, ss:*

Daniel R. Van Nostrand, being duly sworn, deposes and says that he is the proprietor of the firm of Knapp & Van Nostrand, of the said city and county of New York; that the within statement was executed by him, and that the statements and subject-matter contained therein are true in each and every particular, according to the best of his knowledge and belief.

DANIEL R. VAN NOSTRAND.

Sworn to before me the 4th day of April, 1910.

[SEAL.]

SEABROOK WADDELL,
Commissioner of Deeds, New York County.

TRENTON, N. J., *April 4, 1910.*

CARLTON B. PIERCE, Esq.,
House of Assembly, Trenton, N. J.

DEAR SIR: In compliance with your request of April 2 for information regarding what legislation, in my opinion, it is advisable to enact at the present time relating to the cold storage of foods, I desire to submit the following statement:

The storage of food at low temperatures, which such legislation is intended to regulate, is a custom which prevails all over the civilized world, and the amount and variety of food so stored increases rapidly each year. The purpose of such storage is to preserve perishable foods for a longer time than is possible at ordinary temperatures, usually from one producing season until the next. The industry by accomplishing this extends the time during which many articles of food may be marketed from a short natural season to a much longer artificial season, resulting with many of the foods so stored in a continuous supply throughout the year at prices within the reach

of people in moderate circumstances. That this extension of the season for perishable foods is a benefit to the public no one will seriously question. The cold-storage industry, therefore, is a legitimate business when conducted in a proper manner and should receive the support both of the public and the legislature. It is reasonable to conclude therefore that any proposed legislation affecting the industry is intended to correct abuses and not to impose restrictions which will inflict hardship on it when properly conducted.

The clamor which has arisen against the industry during the past few months and which is largely, if not entirely, due to the large increase in the cost of foods ordinarily kept in cold storage, has had for its basis two accusations which are entirely distinct in the sense that they have no necessary relation to one another and should therefore be considered separately. The first of these is, in substance, that cold storage enables perishable foods to be kept off the market for long periods of time, and that this is taken advantage of by dealers for speculative purposes, resulting in an increase in the cost of foods so stored. This may be true or not. I have no special knowledge on this phase of the subject and a discussion of it is quite without the limitations of a sanitarian.

The second objection is that certain foods, especially meat, poultry, fish, game, and eggs, when kept in cold storage for long periods of time, deteriorate in such a manner that they become unfit for use as food and dangerous to the public health. It is this aspect of the question which I purpose very briefly to discuss.

Early in the session of the present legislature two bills having for their purpose the regulation of the cold-storage industry were introduced in the assembly. At about the same time a request was received from the prosecutor of Hudson County to the effect that the state board of health make inspections of the food stored in certain warehouses in that county. Acting under the direction of the state board of health I caused inspections to be made of these places. I have also consulted all the literature to which I have access relating to this subject. I have conferred with officials of the United States Department of Agriculture at Washington and elsewhere and with various other professional acquaintances who were informed on the subject, and the statements which follow, and which represent my best judgment at the present time, are based upon information obtained from all these sources.

I desire first to direct your attention to the fact that many of the changes which go in food kept in cold storage are imperfectly understood, and that the effect of these changes on the wholesomeness of the food are still more imperfectly understood; that our knowledge of the relative importance of the various factors which operate to cause deterioration of food in cold storage is very fragmentary and imperfect, and that long-continued and very elaborate investigations must be made before the scientific control of cold storage is placed upon a firm basis. It is not improbable that such investigations may disclose further facts which will throw new light on the entire question and cause us to modify our present ideas or even abandon some of them altogether. It therefore seems that drastic legislation, which may result in great injury to the business with a probability that no real benefit will accrue to the consumer, would be unwise at this time.

The statements which follow, however, I believe to be well established, and what I shall later recommend is based largely upon them. I have used the word "food" in what follows for the sake of brevity and intend to include in it only fish, meat, poultry, game, and eggs. Some of these statements do not apply to fruits and vegetables or to butter and cheese.

1. Foods when stored at temperatures at or below the freezing point of water, and which were free from decomposition when placed in storage, change in composition, but such changes take place very slowly and are not altogether similar in character to the changes which take place at ordinary temperatures.

2. Foods in which decomposition has begun, when placed in cold storage are not thereby improved. On the contrary, the putrefactive changes go on during storage, very slowly if the foods are frozen, more rapidly if they are kept above the freezing point.

3. Foods which have been kept in cold storage, and especially foods which have been frozen, decompose more readily and rapidly than do fresh foods of the same kind when exposed to ordinary temperatures.

4. Foods which when placed in cold storage were in good condition may be kept in storage for a longer time than is ordinarily regarded as profitable without becoming injurious to health. Their flavor, palatability, and perhaps digestibility will have deteriorated to some extent, and therefore to that extent they are inferior to fresh foods of the same kind and quality.

It therefore appears that the quality of cold-storage food depends not so much on the length of time it is stored as upon its condition when placed in storage. For that reason it is doubtful if legislation fixing a maximum time for storage of foods would accomplish much in the way of improving the healthfulness of stored foods. On the

other hand, legislation requiring that foods offered for storage should be in proper condition would go a long way toward solving the problem. This, however, is a difficult matter for any state government to control. A large part of the cold-storage food consumed in this State is produced and stored in other States and is, therefore, entirely beyond our control. The incipient putrefactive changes which render meat, fish, and poultry unfit for storage are not always readily detected by inspection or analysis. The most satisfactory method of controlling the quality of foods placed in storage is to exercise a rigid supervision over them from the time of slaughter. This is already done by the Federal Government in the case of meat which enters interstate commerce, and such governmental supervision should be extended to poultry and fish. It is manifestly absurd for the legislature of New Jersey to make requirements for the handling of poultry which goes into cold storage in this State and expect the farmer in Kansas who kills the poultry to follow them. The condition of the poultry produced in this State and the fish caught in the waters adjoining it might be materially improved if some such system of supervision were established as is performed by the Federal Government in the case of meat. The cost of such supervision would be so great, however, that the plan hardly seems feasible at this time.

Much can be accomplished by careful inspection of foods at the time they are offered for storage. Section 45 of the food and drugs act now in force in this State (chap. 217 of the laws of 1907) confers ample authority upon the state board of health to condemn foods which are in a state of rottenness or putrefaction or are in any way injurious to health. Section 30 of the same act provides that the board of health of any municipality may enforce the provisions of the act within its own jurisdiction, and therefore local boards have the same powers as the state board within their respective territorial limits. Section 26 of the same act provides for the inspection of places where foods are kept for sale and gives the right of entry and the right to take samples to properly authorized inspectors. It may be that this section is broad enough in its present form to include cold-storage warehouses; but in order that there may be no doubt on this point I recommend that the section be amended in such a manner that cold-storage warehouses will be specifically included. A proposed form for such amendment is attached hereto. I also recommend that section 44 of the same act be amended so as to include within its scope the amendments to and supplements of the act, as well as the act itself. A suggested form for this amendment is also attached.

Under a supplement to the food law (chap. 231 of the laws of 1909) state and local boards of health have ample authority to compel proper sanitary conditions to be maintained in cold-storage warehouses. There is therefore no need of further legislation on this subject.

I also recommend that an amendment to the food law be enacted which will prevent the restorage of food which has been once withdrawn from storage and exposed for sale. For the reasons given above this practice is exceedingly objectionable, resulting in marked deterioration of the food so treated, and should be stopped. A suggested form for a supplement covering this point is submitted herewith.

In addition to these recommendations for legislation aiming to secure the healthfulness of food kept in cold storage, I desire to further recommend that provision be made, by labeling or otherwise, for informing the purchaser of cold-storage food of the exact character of the article which he purchases. He is then in a position to exercise his own judgment and accept or reject as he may elect. Food which has been in cold storage can not readily be distinguished from fresh food of the same kind, and, without some system of labeling, he may be, and frequently is, persuaded to purchase cold-storage food under the impression that it is fresh. This is a fraud which should not be tolerated.

I have not suggested any specific form which such legislation should take, because, up to the present time, I have been unable to devise any plan which seems to me to be adequate and capable of enforcement. If such an act can be drawn, I earnestly recommend its passage.

In conclusion, I desire to direct your attention to still another phase of the situation which merits the attention of the legislature. Laws of the kind above described do not enforce themselves, and are only productive of results when provision is made for their enforcement. I believe, if the legislation above outlined is enacted, that a satisfactory legal basis for regulating cold-storage plants, in so far as our present knowledge will enable us to regulate them, will exist in this State; but, in order that such regulation may actually be accomplished, it will be necessary for the legislature to provide for a sufficient inspection force to cover the ground. The number of inspectors now available is inadequate to enable the state board of health to make any great headway in the inspection of food kept in cold storage.

Very truly, yours,

R. B. FITZ-RANDOLPH,

Chief of the Division of Food and Drugs of the State Board of Health.

STATEMENT OF MR. RAYMOND B. FITZ-RANDOLPH.

Senator HEYBURN. First, state for the record your name and whom you represent.

Mr. FITZ-RANDOLPH. Raymond B. Fitz-Randolph. I am chief of the division of foods and drugs, state board of health, Trenton, N. J.

In Hudson County, previous to the holidays, and that means previous to Thanksgiving Day, when the demand for poultry increases very much, these goods are taken out of storage by the retailers who have previously stored them in these storehouses. Also cold-storage poultry is purchased by them from the wholesalers and exposed for sale.

Senator HEYBURN. How do they prepare it?

Mr. FITZ-RANDOLPH. There is some poultry that is frequently soaked in water for the purpose of thawing it. It thaws more quickly in that manner; and it takes up a considerable amount of water, so that the weight increases.

Senator HEYBURN. Does it make them look plump?

Mr. FITZ-RANDOLPH. It makes them look plump, and makes them increase in weight, and the appearance is much better.

Senator HEYBURN. Have you any knowledge as to the extent of the increase of weight by soaking them?

Mr. FITZ-RANDOLPH. No very definite knowledge. It varies a good deal, depending upon the condition of the poultry. There are some chickens which, when soaked in water, will not take up very much water. A chicken that has been in storage for several months and has lost considerable water by evaporation will take up quite an appreciable amount—just how much I can not say very definitely. We have made some experiments upon that point, but they are too few to draw general conclusions from; but the appearance is very much improved.

Senator HEYBURN. Is the quality of the chicken improved at all by the soaking process as to its healthfulness?

Mr. FITZ-RANDOLPH. I should say no. The soaking, where any considerable number of chickens are thawed in that way, is necessarily done in very heavily infected water, and that soaking results in a superficial bacterial infection, which undoubtedly injures the quality of the fowl.

Senator HEYBURN. Now, that is when they are taken out?

Mr. FITZ-RANDOLPH. That is when they are taken out.

Senator HEYBURN. In what condition are they kept in the interval?

Mr. FITZ-RANDOLPH. During storage?

Senator HEYBURN. After they are taken out.

Mr. FITZ-RANDOLPH. In the ordinary retail butcher's establishment they are exposed for sale in the shop, hung up on hooks during the day, and probably put in the ice box overnight. Then they may be kept there until after the holidays, although after New Years considerable surplus stock is returned again to storage and frozen. Most of these people sell at a loss, however, rather than return to storage, but some of them do it.

Senator HEYBURN. It appears from the statistics which have been given that there is more poultry placed in cold storage in January than in any other period of the year, or in any other several months of the year, which it has been stated consists of the left overs from the holiday sales. What do you know about that?

Mr. FITZ-RANDOLPH. Some of it is. I can hardly believe that all of it is due to that cause, although I do not know just where that poultry comes from. Very little of the poultry killed in New Jersey goes into cold storage. The demand for high-grade, fresh poultry is always very much greater than the supply, and most of our poultry goes directly to New York and Philadelphia and the cities in New Jersey.

Senator HEYBURN. Unless there is something more that you want to say about the poultry, we will go to the fish question. Have you made any investigations as to the cold storage of fish?

Mr. FITZ-RANDOLPH. I have not been able to find out much about fish, because very little fresh fish is stored within the State. I have endeavored to find storage fish and have been able to find none. I am informed that there is a small plant along shore where freshly caught fish are frozen and then shipped out, but I have not had an opportunity of investigating that as yet.

Senator HEYBURN. Fish frozen in blocks is not objectionable?

Mr. FITZ-RANDOLPH. Not if in proper condition when frozen.

Senator HEYBURN. They freeze them upon the deck of the vessel when caught at sea. On our coast they catch the black cod. It is put into a form and frozen in a few minutes and remains there until taken out.

How about the meat products now, veal, sheep, and beef; have you inspected that?

Mr. FITZ-RANDOLPH. Yes.

Senator HEYBURN. What do you find in relation to that?

Mr. FITZ-RANDOLPH. I can say very little about that, because practically all of the cold-storage meats, when stored in the State, has been slaughtered outside of the State and brought in.

Senator HEYBURN. It does not come within your jurisdiction?

Mr. FITZ-RANDOLPH. Not entirely. It comes within the State in storage, and the conditions when stored are uniformly good.

Senator HEYBURN. You have made an inspection in regard to eggs?

Mr. FITZ-RANDOLPH. Yes.

Senator HEYBURN. Tell us about that.

Mr. FITZ-RANDOLPH. A very large number of eggs are stored within the State.

Senator HEYBURN. Have you a list of them?

Mr. FITZ-RANDOLPH. I have not brought the figures, because the figures I have were obtained from the same sources which the committee already has, and they would be substantially the same.

Senator HEYBURN. What have you to say as to the condition of eggs in storage and the effect of storage on eggs?

Mr. FITZ-RANDOLPH. A great deal depends upon the condition of the egg when it goes into storage. In fact, very much more depends upon the condition of the egg when it goes into storage than upon the length of time it is stored.

Senator HEYBURN. Do they change materially in character during the time that they are in storage?

Mr. FITZ-RANDOLPH. No.

Senator HEYBURN. A fresh egg, I suppose, could stand up better under storage than one that was not fresh?

Mr. FITZ-RANDOLPH. Oh, yes.

Senator HEYBURN. One that is not fresh when stored would deteriorate more rapidly?

Mr. FITZ-RANDOLPH. We are now investigating in the laboratory some eggs that have been stored for fourteen months which were stored on the day they were laid—perfectly fresh, good eggs. They are now in a condition which I could call good. Very edible. Their flavor is fairly good. They are not to be compared in quality with strictly fresh eggs, and they show certain changes. They are superior in quality, I should say, to the ordinary fresh farmer's egg of warm weather. That is, an egg which has been gathered up by the farmer after lying around for three or four days exposed to high temperatures, and sent in to market in the ordinary manner in which those people market those eggs.

Senator HEYBURN. You have seen the statement as to the kind of eggs that are stored. Can you verify that?

Mr. FITZ-RANDOLPH. Most of those eggs come from outside the State.

Senator HEYBURN. Then, what you have said about these freshly laid eggs is not applicable to those that come from without the State?

Mr. FITZ-RANDOLPH. I have no knowledge as to that.

Senator HEYBURN. You have not made any investigation?

Mr. FITZ-RANDOLPH. This particular lot of eggs were put in storage and, so we were informed, were forgotten. As a matter of fact, they belonged to ex-Senator Dryden and were stored by somebody in his employ and had been forgotten, and they do not represent the ordinary storage egg. They are exceptionally good quality.

Senator HEYBURN. Is there anything else that you would like to say that you think would be of interest or in the line of this subject-matter?

Mr. FITZ-RANDOLPH. During my investigation of the cold-storage plants, we got certain information relative to the times when certain articles of food were held in storage, and I thought possibly that would be of interest.

Senator HEYBURN. Yes; we would like to have that data.

Mr. FITZ-RANDOLPH. These figures were obtained from the warehousemen in charge of cold-storage plants, and I believe them to be reasonably accurate. I will hand you this to go into the record.

Senator HEYBURN. This paper will be marked as "Exhibit A," in connection with the testimony of this witness.

(The paper is as follows:)

EXHIBIT A.

Average and maximum times and temperatures of storage of foods in certain cold-storage warehouses in New Jersey.

Class.	Temperature.	Average time.	Maximum time.
	° F.	*Months.*	*Months.*
Poultry	0	6	10
Eggs	29	6	10
Fish	0	6	12
Fresh meat	0	6	12
Butter	0	6	10
Apples	32	2	5–6
Celery	32	1	2–3
Peaches	32	1	.....
Pears	32	1	.....
Dried fruits	32	6	[a] 12

[a] Or more.

Senator HEYBURN. Is there anything else that you had in mind?

Mr. FITZ-RANDOLPH. Nothing else in connection with our inspection work. If the committee desires, I have in mind to submit certain suggestions at the request of the state board of health?

Senator HEYBURN. Suppose you reduce those to writing?

Mr. FITZ-RANDOLPH. I have reduced them to writing. I have them right here and I will hand them to you.

Senator HEYBURN. I will mark that "Exhibit B," in connection with this testimony.

Mr. FITZ-RANDOLPH. That is all I have to say to the committee.

(The paper is as follows:)

EXHIBIT B.

PROVISIONS WHICH SHOULD BE INCORPORATED IN A BILL TO REGULATE THE COLD STORAGE OF FOODS.

1. No articles of food intended for sale or distribution should be permitted to be placed in cold storage unless at the time of entrance of such foods into storage they are in such condition that they will be certain to remain wholesome during the maximum period of storage allowed for such articles, proper storage conditions being assumed.
2. No foods should be permitted to remain in cold storage longer than experience has shown that they can be kept without injury to their wholesomeness and without marked deterioration in quality, and no article of food should be permitted to remain in storage longer than the time elapsing between one season of production of that article and the next.
3. The re-storage of foods after they have once been withdrawn from storage should be prohibited.
4. Foods which have been kept in cold storage should be labeled in a manner which will indicate that fact to the purchaser, and such label should remain attached to the food until it is sold at retail to the consumer.
5. Just what constitutes cold storage should be defined in the act.

STATEMENT OF MR. ROBERT M'D. ALLEN.

Senator HEYBURN. Just give the stenographer your name, residence, and position.

Mr. ALLEN. Robert McD. Allen. Head of the food and drug division of the Kentucky agricultural experiment station.

Senator HEYBURN. Have you read the bill under consideration?

Mr. ALLEN. I have, Senator.

Senator HEYBURN. Have you prepared any data with reference to the subject-matter of this legislation?

Mr. ALLEN. I have some preliminary data that was prepared at the request of Doctor Scovell.

Senator HEYBURN. What is Doctor Scovell?

Mr. ALLEN. Doctor Scovell is director of the experiment station. The Kentucky law is enforced through the experiment station organized into a division, and I have charge of that division.

It is the experience of the officials engaged in the enforcement of the food and drugs act of the State of Kentucky that federal legislation is needed to assist in the proper investigation and control of cold-storage problems. The State can take care of foods entered into its own storage plants and for its own use and also of that part of the cold-storage problem after the foods are brought into the State, but federal law is needed to require food products intended for interstate commerce to be entered into cold storage in a fit condition, and to supervise the cold storage of such products and to insure their proper

transportation in interstate commerce, and for which purposes a better measure is needed than the bill now before the committee. Senate bill 7649 was evidently drafted as a basis to work upon, and to bring before the committee two suggested remedies, a time limit and the proposition to require cold-storage products not exceeding such limit to be labeled so as to indicate the length of time that they have been kept therein.

There are four outstanding matters to provide for in connection with such a bill: (*a*) The soundness and sanitary condition of the meat, fruit, or egg entered into cold storage; (*b*) the temperatures, humidity, and sanitary condition of the cold storage plants; (*c*) the temperatures and sanitary condition of the car or other means by which the product is transported to the markets; (*d*) the temperatures and sanitary conditions under which the product is subsequently kept in the market. It will be found upon investigation that much of the pure-food part of the cold-storage problem occurs either before the product enters the cold-storage plant or afterwards. And in this connection state laws must regulate the manner in which cold-storage meats, fowls, fish, fruits, and vegetables are treated in the retail market.

Proper and limited cold storage is one of the most necessary and healthful of the several forms of food preservation. Not only this, it is one of the fundamental means contributing to the agricultural prosperity of this and other countries. Striking examples of this can be found in connection with the milk, cream, butter, cheese, egg, fish, meat, fruit, and vegetable and their allied industries. There is section after section in the United States prosperous by reason of the wider and steady market which cold storage affords and which can be kept prosperous by intelligent but firm regulation.

About the year 1875 ice began to be used to a large extent for the preservation of fresh meat during its transit from America to the European markets and marked the first successful method of preserving fresh meat for such a period as would enable it to be sold in so remote a market. The method at that time consisted in cooling a large meat chamber, hung full of carcasses, by blowing therein air previously cooled to about the freezing point. The air was cooled by being passed through reservoirs of ice. This process was not all that was desired of it, but it was successful in its way and a great aid to our commerce until about the year 1879, when Messrs. J. J. Coleman and H. and J. Bell put into operation the Bell-Coleman dry-air refrigerating system. The system of these inventors consisted in compressing the air and freeing it from moisture. Their invention was further improved by Mr. A. Seale Haslem. The new American Supplement of the Encyclopedia Brittanica, in commenting upon the relation at that time of the successful system of cold storage to the meat industry, says:

By means first of the Bell-Coleman and subsequently of the Haslem method fresh meat has been regularly imported into Europe from America since March, 1879, when the Anchor liner *Circassia* delivered the first cargo. In February, 1880, the first shipment from Australia, consisting of 34 tons of beef and mutton, was delivered in London by the *Strathleven*, and in June, 1882, the sailing ship *Dunedin* brought from New Zealand to London, after a passage of ninety-eight days, 4,909 carcasses of sheep and 22 pigs, all in perfect condition, notwithstanding the prolonged voyage and the excessive heat encountered during the passage. The dry-air refrigerators have also been largely adopted in passenger and emigrant vessels for preserving fresh provisions for daily use throughout their voyages, and preserving chambers and freezing chambers

have been erected on land at the ports of lading and delivery. The machinery at present in use is capable of freezing upward of 300,000 tons of meat per annum, and it is rapidly being added to; and it may be said that these machines have accomplished a perfect solution of the great problem of fresh-meat preservation and distribution.

The last revision of the Encyclopedia Americana says:

* * * Perhaps no product ever came into common use more rapidly than air treated according to the cold-storage method, unless electricity or steam be excepted. It is now indispensable in connection with some of the largest business enterprises, which without it would soon cease to exist. One of the most important uses of cold storage is in the transportation of beef, fruit and vegetables, etc., from place to place and from one country to another, especially from the United States and South America to Europe.

The extensive systems employed in breweries, provision depots, dairies, and distilleries have familiarized the public with the use of cold air; and no modern hotel or apartment house on a large scale is constructed without a plant for producing it by some process. It is as much a portion of the mechanical equipment as the elevator motor or the lighting and heating apparatus. It is also being introduced for cooling purposes in theater and other auditoriums; it maintains a pleasant temperature during the heated term in the hospital ward, and several companies have been formed to distribute it in cities through mains, as water and gas are supplied to the consumer. In some of the largest packing houses of Kansas City and Chicago not a pound of ice is used in a year for preservative purposes, although every department where the products of the beef, sheep, and hog are stored any length of time is required to be at a temperature near or below the freezing point. Plants are now being made in this country to generate cold air for butter and butterine factories, ice cream factories, chemical works, sugar refineries, molasses factories, paraffin works, oil refineries, stearine factories, chocolate factories, morgues, office buildings, skating rinks, steel-tempering plants, blast furnaces, laundries, glue works, dry-plate works, dynamite works, paint factories, soap factories, fur storage, india-rubber works, and plants for seasoning lumber—a list including some of the country's most important industries.

(*b*) * * * Food products can be preserved in properly constructed houses with as little difficulty as any other articles. In the preservation of meat, from the time that the beef, sheep, or hog is killed, it is kept in cold storage or "chill" rooms, until the time that it is taken from the refrigerator to be prepared for the table. The "chill" rooms are used to take the animal heat out of the meat, and reduce its temperature from about 98° F. to cold-storage temperature; that is, from 32° F. to 40° F. For this purpose the meat is hung on rails in rooms which have chambers in the upper part over the rails for ammonia or brine piping, which reduces the temperature to a point near freezing before the meat is put in. After the meat is put in, the animal heat it still contains raises the temperature in the room, but this is again gradually lowered, in the course of twenty-four to forty-eight hours, to the proper degree for refrigeration. This length of time is required in order to chill the meat thoroughly. Should it become chilled on the outside and remain warm in the center, the center part of the meat would be spoiled. From the "chill" room the meat is run into the cold-storage rooms and hung on rails, where it is kept until such time as it is to be shipped. The choicest pieces are kept at least four weeks in cold storage, as the quality is thus improved, and, if the rooms are kept clean, these pieces will taste better than meat which has been recently slaughtered. For this reason, not only slaughterhouses, but depots of packers and other buildings where meat is kept in cold storage, even to small butcher establishments, are preferably cooled by refrigerating machinery, owing to its dryness and cleanliness.

In some of the large hotels refrigerators cooled by machinery are even placed close to the ovens or ranges where the viands are prepared for consumption, the refrigeration being maintained at the proper standard despite the outside temperature. High temperature is also the rule in candy factories, but manufacturers of chocolate candy have been using refrigerating machines for some time. They are forced to do this, as the compound is apt to become soft in hot weather, which, of course, would spoil the appearance of the goods for the market. The arrangement of the refrigerating piping for chocolate factories has been made in various ways. In some instances a large refrigerator is cooled in the center of the workroom with the piping inside of it, this refrigerator being of such length that endless belting carrying tins with chocolate enters it on one side and brings them out chilled on the other. In other workrooms a series of pipe coils are simply placed along the ceiling, and the cold air coming down chills the confectionery as it is made by the employees in the same room. The chocolate is then stored in refrigerators, apart from the workroom, and there properly packed at a low temperature. After being packed it can be sent out, and ordinarily will keep for an indefinite length of time.

To this it might be added that the work in this and other countries for pure milk depends upon producing the milk clean, keeping it clean, and keeping it cold. I mean, of course, to a limited degree. We are beginning to require the dairymen and milk dealers to keep their milk and cream at cold temperatures, and this requirement can not, of course, be met unless they are also taught the economical production of ice, and the use of cold storage facilities. To illustrate, let us take, for example, what is known as the Shelbyville dairy district in the State of Kentucky, a district comprising about five hundred already prosperous dairies. This district makes some butter, but ships most of its product, in the form of milk and cream, distances of from 20 to 40 miles into Louisville. Now, two refrigerator cars daily operated on the two lines that gather the milk from this district, supplemented by cooperative ice plants on the part of the dairymen, would add greatly to the quality of the product, would increase the production, would minimize the loss which falls upon the dairymen during the summer months by reason of soured cream and milk, and, along with enforced sanitary regulations, would have a direct influence upon the work of reducing the infant death rate in the city of Louisville, strict sanitary methods, of course, in addition. The dairyman throughout the South is handicapped, because we have not the natural temperatures which exist in Minnesota, Wisconsin, and Iowa, and the building up of this important, profitable, and desirable branch of the food industry in the South will depend upon the ability of the dairymen to avail themselves of economical refrigerating systems along with the further question of importing, or training of the negro into, skilled dairymen.

While the large packers have availed themselves of the advantages of cold storage, such is not the rule in the case of the local slaughtering house; and, in taking up this, the most difficult problem which the state food-control officials have yet encountered, we regard the practical control of temperatures, through cold storage and other methods of refrigeration, one of the chief means by which we hope to accomplish the establishment of model local abattoirs and wholesome methods for the retailing of meat products.

In section 1 of Senate bill 7649, Senator Lodge proposes to prohibit the sale of "any article of food which has been held in cold storage for more than one year." The full enforcement of such a provision of law would be difficult. This provision could only apply to interstate and foreign commerce. After products which have been held for nearly a year have been shipped into and have become a part of the commerce of a State, the operations of the federal law would cease, and unless therefore the State exercises an immediate and cooperative control in conjunction with the Federal Government, there would be little practical benefit to be derived.

Any study of the cold-storage question can not but lead to the conclusion that a regulation based upon the time limit should also depend upon the particular kind of food, the temperatures and humidity, the sanitary condition of the storage, and the subsequent market treatment. A law prohibiting the sale of any article of food which has been held in cold storage for more than one year, if intended as a pure-food measure, is not altogether based upon existing facts. Take some examples: With respect to the effect of cold storage on the

curing of cheese, Doctor Wiley says, on page 215 of his work on Foods and Their Adulteration:

Attention has been called, in the description of different methods of making varieties of cheeses, to the ordinary temperature at which cheeses are cured. In European countries these temperatures are maintained without the use of artificial means. In the United States it is difficult to maintain a very low temperature in summer time without the use of artificial refrigerators. Experimental studies have determined that when the temperature of ripening or storage is reduced to a considerable extent below that usually specified for the standard varieties of cheese, the quality of the cheese is superior, although the time for storage or ripening is very much prolonged. The artificial curing of cheese has been secured at as low a temperature as 40 degrees. There is also a less loss of weight in cheese cured at this low temperature.

In 1897 Professors Babcock and Russell, of the Wisconsin experiment station, made one of the first reported accurate demonstrations of the fact that the temperature between 40° and 60° F. is the only safe temperature for curing cheese. These gentlemen kept cheese successfully in cold storage for a period of eighteen months, six months longer than Senator Lodge's limit. In connection with the work of curing cheeses and for the further purpose of permitting the farmer to keep the cheese until it is ready for the market, these experiment station officials advise "the erection of centrally located cold-storage curing stations where the cheese from a number of factories could be shipped at frequent intervals, and ripened under safe and uniform conditions." And writing further upon this point, Professors Babcock and Russell say:

This centralization and cooperation in this most vital part of the cheese business has the following advantages:

(*a*) It would diminish the inevitable losses that occur in the quality and quantity of the product, and would thereby secure much larger returns to the factory patron than is possible under the present system.

(*b*) The same result could thereby be accomplished at a less expense than is possible in individual factories.

(*c*) It would permit of the employment of experts to cure and care for the product in a more satisfactory way than could be done in the factories by the cheese maker whose time is already sufficiently occupied with other duties.

(*d*) It would facilitate the sale of the product, as large lines of uniformly cured cheese could be inspected personally by the buyers at less expense; consequently, the cheese would net a higher price for even the same quality. In this way there would be no chance for rejection of cheese once purchased.

(*e*) Transportation charges would be lessened by shipment of large consignments. In individual factories, if cheeses are held for carload lots, the maturity of the product varies materially, thus diminishing its market value.

(*f*) Under these cold-storage conditions cheese can be held in safety to sell at opportune times. Ordinarily cheese in the factories must be sold with the advent of hot weather, whether the market is favorable or not. This places the factory owners often at the mercy of the buyers.

The above suggestions by Professors Babcock and Russell is another illustration of the many valuable uses to which cold storage can be put in the production and handling of all classes of food products. In fact, every dairy, poultry, and fruit and vegetable community, and every commission and retail market engaged in the handling of such products, could secure great benefits not only for themselves, but for the ultimate consumer, by employing properly conducted and properly limited cold-storage facilities. The farmer gathers his corn into cribs, and, in many instances, his wheat into community-owned elevators. Now, available cold-storage systems would enable the farmer, the fruit grower, and the poultry raiser to do the same with respect to these perishable products, and, if there are some foods like

cheese, which can be safely and even advantageously stored for a period of twelve months or longer, and if there be no pure-food reason requiring it, there should be no other reason to require the emptying of the cold-storage rooms every twelve months any more than there should be to compel the emptying of the crib or the elevator. It would seem to follow, therefore, that if time limits are put upon cold-storage goods, such limit should be arranged with respect to each particular product, and with respect to the conditions under which the product is received and under which it is stored.

Again, sometimes other methods of food preservation, such as drying or curing, or such as salting and smoking, are combined in connection with cold storage. It may be found that cooled temperatures are best for storing the smoked ham, the bacon, lard, dried fruits, and the various preserved products put into bottles and jars, many of which products are better, from the standpoint of the particular type of food which they constitute, after they are a year or more old than before. And with cold storage there would be no excuse for antiseptics. Take, for example, the sirup industry of the South, or the fruit industry in the Pacific West, where the producers have found it necessary to employ sulphur as a preservative. Economic systems of cold storage throughout the handling and marketing of these products may make it economically possible to dispense with the sulphur. And, so, numerous examples can be cited.

As strikingly pointed out in the above extract from the encyclopedias Brittanica and Americana, cold storage is one of the chief means by which many agricultural products are transported to the markets of the world. While the confidence in American trade undoubtedly depends upon the wholesome and fit condition of our products, yet if it is demonstrated that a frozen carcass of beef kept for a year or more and transported in that frozen condition is not rendered thereby unwholesome or unfit for food, we should not hamper our American industries in availing themselves of such means of food preservation in seeking the world's markets; allowing such a product go from our ports labeled to show the character and extent of the storage, but not also with the information which would be widely disseminated by our competitors from other countries that we are sending products which we consider unfit for home consumption, when in fact there may be numerous instances where such is not the case.

The temperature and humidity are all-important questions in determining the limit of time the various food products should be kept in cold storage. With respect to meats, Mr. W. D. Richardson, of Chicago, chief chemist for Swift & Co., has contributed two published reports of investigations, the first being published in the Journal of the American Chemical Society for October, 1908 (vol. 30, pt. 2), and the second paper in the Journal of Industrial and Engineering Chemistry for February, 1909 (vol. 1, No. 2).

In work of this kind Mr. Richardson is entitled to consideration, for he is known to the food-control officials as a man of undoubted ability and scientific integrity, and has had exceptional opportunity to study meat subjects. In the first experiment Mr. Richardson made analyses of fresh meats stored for a period of forty-eight hours and of cold-storage meats stored for periods ranging from a year to

five hundred and fifty-four days. Analyses were made, which analyses were in turn employed to interpret bacterial changes, and referring to which Mr. Richardson and his assistants state in the first paper (p. 1525):

Since the ordinary deterioration of flesh foods is principally or wholly a bacterial process, it is logical to infer that it will follow in degree the course of the degradation of the proteins in general as accomplished by micro-organisms. This process is characterized by the conversion of insoluble proteins into soluble ones, of coagulable proteins into noncoagulable ones by the continued hydrolytic splitting of large molecules into smaller ones with the production of amino acids, acid amides, lower fatty acids, and ammonia. During the process of the changes indole and skatole and their compounds are set free, as well as various benzine derivatives, mercaptans, and hydrogen sulphide. Sometimes a change in reaction is observed. Organic sulphur and phosphorus are converted into inorganic. In the end, if the action proceeds to its conclusion, the substances concerned will have been converted for the most part into gases or vapors or inorganic salts. However, one of the peculiarities of bacterial decomposition is that the last stages of the process, chemically considered, the formation of ammonium salts or derivatives and hydrogen sulphide, for instance, occur almost at the beginning of the decomposition. There seems to be little tendency to produce, first albumoses, then peptones, then amino compounds, and so on, but all these substances are formed almost at the beginning, while the tendency and final end of the process is the formation of the simplest compounds. In the earlier stages, at least, the fermentations of the proteins bear a striking resemblance to protein hydrolysis as excited by hot water, digestive enzymes, acids, alkalies, and salts. Whatever methods of analysis are adapted to follow changes such as these, are applicable to the work under consideration. The choice would depend upon the comparative simplicity, accuracy, and rapidity of the methods considered. During the progress of the work about to be described, various methods were used at different times with different degrees of success, and the methods most used were those which proved most applicable, all things considered, to the work in hand.

Bacteriological examinations were also made, and with respect to which he reports (p. 1550):

We have examined a number of samples of frozen beef knuckles for bacteria microscopically, without finding them present. In the examination the pieces were cut across with a knife or saw about one-third the distance from the larger end. Scrapings from various parts of the section thus exposed were taken by means of a sterile scalpel (the surface scrapings were discarded and those from just below the surface retained), fixed on glass slides, stained, and examined systematically, use being had of the 2-millimeter oil-immersion objective and mechanical stage. Frozen beef knuckles of all ages up to six hundred days were examined in this way, scrapings being taken at points varying from 1 centimeter below the surface to the center of the meat, without finding bacteria. In no case were indications of bacteria observed. In six hundred days, if bacteria have the ability to penetrate frozen beef, if would seem that they ought to reach a depth of 1 centimeter.

With respect to interpretation of the analytical results he states (p. 1559):

A general inspection of the tables shows very little difference on the whole between the analyses of fresh and frozen samples. The variations in the individual fresh samples are hardly greater than would be expected in material of this kind into whose composition so many factors enter, and the differences between maxima and minima in fresh and frozen samples are of the same order. In general, the variations do not tend definitely in one direction in the frozen samples; the ammoniacal nitrogen, the coagulable nitrogen, and the albumose nitrogen figures do not show a progressive tendency to increase or decrease. The largest difference between the analyses of fresh and frozen samples occurs in the acidity figures, which are larger on the average by a small amount in the case of the frozen samples; but even here no progressive tendency is shown, since the oldest samples do not show the highest acidity nor the youngest the lowest. Nor is there any indication of the acidity reaching a maximum at a certain age and then falling off. It is possible that the analysis of a larger number of samples would produce agreeing averages in the case of acidity. It should also be mentioned that on account of the nature of the acidity determination and the lack of sharpness in the end point, even when using phenolphthalein, it is a questionable analytical procedure to magnify the minute differences as shown in the original deter-

minations by calculating to the moisture, ash, and fat free basis. It is, in general, a doubtful procedure, to magnify the necessary errors of analytical methods. We attach no importance to the slight differences in the acid figures.

With respect to the agreement of flavor between the fresh beef and the frozen beef he states (p. 1563):

In order to determine whether or not there was any change in flavor in frozen beef after storage which would distinguish it from fresh beef, a frozen beef knuckle six hundred and ten days old was boiled without seasoning and eaten. The flavor was identical with that of fresh beef, nor was it possible for one not knowing the age or source of the meat to distinguish it from fresh meat. We may say that similar tests of frozen poultry have resulted similarly.

With respect to the experiments conducted and reported in this first paper, Mr. Richardson concludes:

On the whole the results of the various lines of work reported in this paper, chemical and histological, indicate that cold storage, at temperatures below —0.9° C., at least, is an adequate and satisfactory method for the preservation of beef for a period of five hundred and fifty-four days, and probably for a much longer time.

Of course, frozen meat kept for such length of time must necessarily be kept frozen until ready for consumption, and then properly thawed; and such experiments, while showing what can be done, do not relate to the actual market conditions. In the second paper, published in the Journal of Industrial and Engineering Chemistry, Mr. Richardson describes the purpose of the second series of experiments as follows:

In a previous paper we developed certain methods of analysis adapted to the detection of degradation changes in proteins and applied them to the question of determining whether or not changes of a chemical nature occur in lean beef stored for considerable periods of time in the frozen condition, or in what is commonly called "cold-storage" beef. The average of a number of analyses of fresh beef compared with a similar average in the case of frozen beef showed results so nearly identical that the conclusion was reached that no changes of a chemical nature occur in lean beef at temperatures below 9° C. for a period of five hundred and fifty-four days and probably for a longer time; that is, changes which can be detected by the methods employed. It should be stated that the samples of beef used in the previous experiments when properly stored for over two years gave no indications to the senses of smell and taste of deterioration.

It remains to be demonstrated that the methods employed in the previous investigation were suitable to the purpose in hand; that is, that they were capable of detecting changes of a chemical or biochemical kind which might occur in flesh foods under the influence of ether, salts, acids, and such agencies as enzymes and bacteria. The way to determine the suitability of the methods would be to store meats under conditions wherein obvious changes ensue and to make analyses of samples at intervals. The purpose of the present paper is, first, to show that the methods are capable of detecting deterioration and, second, to follow by means of them the changes which occur when beef is stored in ordinary cooler temperature; that is, a few degrees above the freezing point—say 2-4° C. These temperatures—just above the freezing point—are the ones used by the large packing establishments for storing fresh meats, for shipping them in refrigerator cars, and for curing salt meats. In the butcher shop and the home, where meats are kept in ice-cooled refrigerators, there is an approximation to the same temperatures, but for the most part in such storage the temperatures are higher and consequently deterioration proceeds more rapidly.

A sharp distinction must be made between the temperatures now being considered and those which were discussed in the first paper on frozen meats (—9 to —12° C.), for, although with progressive lowering of the temperature, the conditions for bacterial multiplication and chemical activity become steadily less, still, down to the freezing point of water and many degrees below, suitable forms of bacteria develop and multiply very well in suitable media, provided only that the media are liquid. It is the solid condition which limits bacterial growth absolutely. In solutions which, because of the concentration of salts or other substances not decidedly antiseptic in nature, do not freeze at 0° C., suitable bacteria are capable of development at as low a temperature as —20° C. and possibly lower. Yet, in solid ice at 0° to —1° C., they have no power of growth, although in the same medium, liquid, at 0° to +1°

C. they would grow readily. Thus in frozen meats below −9° C. bacteria do not develop and can not penetrate from the surface, while they grow readily in liquids at this temperature or below. Not that the juice of meat is solid at −9° C., but the solution which remains liquid is too concentrated and viscous to permit bacterial multiplication, and, further, this solution in frozen meats remains at segregated points (mostly within the contracted muscle fibers), which are isolated by solid barriers of ice.

There is no doubt that the bacterial flora which causes the deterioration of meat (for this is mainly a bacterial process) at temperatures near the freezing point differs more or less from that which produces similar changes at higher temperatures. This is a subject which has not yet been accorded the thoroughgoing investigation which it deserves (because of its great importance from the hygienic, as well as the economic, standpoint), but each year adds some data to that available. The demonstration of the general principle stated—namely, that a characteristic bacterial flora excites the deterioration of meats at temperatures near the freezing point, particularly in large establishments whose storage rooms are maintained at fixed temperatures for years, is not difficult; but, on the other hand, the work of developing a technique for the proper cultivation and study of these forms (in the case of salt meats as well as fresh) has not yet been carried out.

Further, these experiments refer first to the deterioration of fresh-hashed beef kept at a warm temperature, the changes in meats to which preservative substances have been added at a temperature at from 2° to 4° C. and on fresh beef containing no preservatives and stored at a temperature of from 2° to 4° C. In paper 2, relating to the experiments with the beef at from 2° to 4° C. and containing no preservative, it will be noticed that changes begin at 14 days of age, and that at 53 days of age there is a marked increase in total nitrogen, in coagulated nitrogen, in albuminose, and in meat-base nitrogen and in acidity. And interpreting these results in the light of the suggestions made by Mr. Richardson in connection with paper 1, it will be seen that storage at from 2° to 4° C. does not afford as good a means of preservation as does the freezing of the beef, but would afford a means of preservation for a period of from four to six weeks. With respect to this experiment on fresh meat stored at from 2° to 4° C. Mr. Richardson says:

In examining Table III it will be noticed that laboratory No. 3182 was analyzed without separation of the surface layer. That it should have been separated is shown by the ammoniacal nitrogen being higher than that of the succeeding sample, No. 3415. In fact, it requires more than thirty-two days more of storage for the ammoniacal nitrogen figure determined on the interior portion to surpass that shown in the table at thirty-one days. Later on there is no necessity for separating exterior and interior, inasmuch as the whole piece is in a condition of active decomposition.

It must not be supposed that in tests conducted upon a number of pieces of meat which are undergoing decomposition the course of the process will be the same in each piece and that on a given date two separate pieces will yield the same analytical figures. Even though the pieces are as nearly uniform as selection will make them, there are still individual differences of structure and of composition (differences of fat content, for instance) which will notify the rate of penetration and multiplication of bacteria. It may even happen that similar pieces of meat exposed to apparently similar conditions will yet be invaded by bacteria, the predominating races of which are different. Slight differences in the nutrient substratum will sometimes determine the preponderating variety. And so not only the relative abundance of bacteria, but also the relative abundance of different kinds with different chemical activities, affects the course of chemical change in the decomposing material. Within limits, then, the putrefaction of meat may assume very different aspects. The reaction may be acid or alkaline to litmus or other indicators, although it usually becomes alkaline to litmus and remains throughout acid to phenolphthalein. A great variety of acid and basic bodies may be produced under various conditions, aerobic and anaerobic, and at various temperatures. Under anaerobic conditions we speak of putrefaction, under aerobic conditions of decay. Recent work indicates that characteristic stinking putrefaction can be excited only by anaerobes. In spite of the different courses followed in different cases of putrefaction, its characteristics are sufficiently well

defined to distinguish it from all other chemical processes. The same may be said of decay.

The meat used in the present experiments was the part known as the "knuckle" from the hind quarter of cattle. The piece is of very uniform lean composition, weighs usually 7 to 8 pounds, and is somewhat conical in shape, 7 inches in diameter at the base by 14 inches high.

Experiments were also carried out to determine the changes in beef which had been frozen for thirty-three days and had then been transferred to a temperature of from 2° to 4° C. At the end of the twentieth day of this experiment at this temperature the figures show a steady increase in the changes which indicate decomposition, all of which goes to show that the condition of the meat when entered into cold storage and the temperature at which it is kept and the temperatures at which it is transported and subsequently kept in retail markets, are most important factors in formulating regulations.

The following reports from inspectors in the Kentucky food department give interesting data with respect to temperatures both in the wholesale and retail trade. Report from Dr. W. R. Pinnell:

As per request I herewith submit a report on the cold-storage rooms of the various meat packers in Louisville. The test for temperatures of same are as follows:

C. F. Vissman & Co.

	°F.
Chilling room	34
Pickling cellar	35
Dry salt room	36
Utility and pickling room	36
Subpickling cellar	37
Lard room	42
Ice box for meat to trade	36

Louis C. Bornwasser & Co.

Beef chill room	35
Pork chill room	33
Dry salt room	35
Pickling room	35

Louisville Provision Company.

Beef chill room	35
Pork chill room	38
Pickling cellar	36
Sausage and order room	38

Armour & Co.

Beef cooler	36
Dry salt pork room	47
Pickling room	38
Poultry room	12

Swift & Co.

Has no cold storage rooms; sell from refrigerated cars—3 cars on siding.

Car 7091 received April 18, 1910	40
Car 10651 received April 18, 1910	36
Car 10012 received April 20, 1910	33

Salt pork at ordinary temperatures.

Omaha Packing Company.

Receives fresh meat on Saturdays only.
Ice box for same at 45° F.
This meat usually disposed of within 24 hours.
Salt pork kept at ordinary temperatures.
Armour's poultry room only instance where meat was kept in time storage. This had been in storage since November, 1909.

I herewith submit a report of inspection of the ice boxes of various retail meat dealers.

F. E. Montgomery.—701 West Broadway. Meat from Louisville Provision Company. Ice box at 44° F.

H. A. Kraft.—Kentucky Market, Fifth and Green streets. Does his own slaughtering. Ice box at 40° F. Has machine for same.

John Fust.—Kentucky Market, Fifth and Green streets. Meat from Armour & Co. Same on bench. Ice box, 45° F.

George C. Kraft.—Kentucky Market, Fifth and Green streets. Sometimes has Armour's meat; none at present. Does mostly own slaughtering. Ice box, 43° F.

N. Wile & Co.—Ninth and Market streets. Meat from L. P. Bornwasser & Co. Ice box at 41° F.

Louisville Meat Market.—222 South Second street. Meat from Armour & Co. Meat from Swift & Co. Kills some himself; handles Armour's product chiefly. Some of Swift's meat on bench and rack. Ice box at 44° F.

Fulton Market.—224 South Second street. B. Laumlein, proprietor. Armour & Co's exclusively. Meat on bench. Ice box at 45° F.

Falls City Meat Market.—226 South Second street. Meat from Armour & Co. Meat from Swift & Co. Some local. Some meat on block and counter. Ice box, 45° F.

Report from Mr. B. F. Scherffius:

APRIL 23, 1910.

The following are temperatures registered in some of the meat-store refrigerators:

	° F.
Armour & Co	39
Harp Brothers	56
Kaufman Company	42
G. W. Lanckart	46
T. B. Clemmons & Bro	42
J. D. Foster	44
Moore Brothers	45

All the refrigerators are kept well supplied with ice and constructed much alike. The differences in temperature are due mainly to the frequency by which the boxes are opened for taking meat out.

In the report of the Massachusetts state board of health for 1907 Dr. William F. Boos publishes experiments with respect to poultry drawn and undrawn and kept in cold storage, and this experimenter concludes (p. 335):

1. Poultry kept at temperatures ranging from +5° to −14° F. undergoes no decomposition as a result of bacterial activity.
2. Freezing destroys the red and some of the white blood corpuscles.
3. Freezing temperatures as low as −14° F. destroy a large percentage of the bacteria present, but do not affect the more resistant ones.
4. When the tissues are thawed they become moistened by the melting ice crystals, and in this condition bacterial growth is facilitated and decomposition of the tissues and contents of the cells is promoted.
5. In the drawn chickens placed in cold storage aerobic conditions prevailed throughout the pleuro-peritoneal cavities. The undrawn chickens showed much smaller numbers of bacteria in the pleuro-peritoneal cavities. On account of the closed cavity, partial anaerobic conditions prevailed in these birds.

In decomposing meats, putrefactive aerobic bacteria may possibly produce the primary stages and prepare the way for anaerobes which possibly control the intermediate stages of decomposition. By the combined action of both, decay is brought about, but it is probably finished by aerobic bacteria.

From these facts it appears that, given the aerobic conditions and the larger numbers of bacteria growing on the moist surfaces and tissues of a thawed drawn chicken,

decomposition will proceed at a more rapid rate than with an undrawn one containing fewer bacteria existing under partial anaerobic conditions.

6. In freshly killed, unfrozen drawn chickens the surfaces and tissues become dry within a very short time, and, although aerobic conditions prevail, the bacteria can not grow because of lack of moisture.

7. In freshly killed, unfrozen, and undrawn chickens, on account of the closed pleuro-peritoneal cavities there is no drying of the tissues and surfaces, and facultative aerobic and anaerobic bacteria from the intestines rapidly cause decomposition.

8. By the removal of the viscera without the spilling of the contents of the alimentary tract decomposition can be prevented absolutely. The operation requires about two minutes.

9. Briefly stated, decomposition depends largely upon the presence of moisture in the tissues, for moisture is absolutely essential to bacterial growth. In freshly killed birds, ordinarily or properly drawn, the surfaces quickly become dry. In cold-storage birds, no matter how they are drawn, the tissues will be moist, because of the melting of the crystals of ice. If properly drawn, there would be but few bacteria present capable of causing decomposition.

In the Yearbook of the Department of Agriculture for 1907 Mary E. Pennington, special agent, publishes a report with drawings on "Changes taking place in chickens in cold storage." That experimenter sets forth conclusions as follows (p. 206):

The changes in the chickens which have been described are not the most pronounced of their kind, other specimens exhibiting more marked degenerations and some showing better conditions. These were, rather, alterations representing as nearly as possible the mean.

Such being the case, the dictum of the warehousemen that there is no change in cold-storage poultry and that it may be kept for an indefinite period can not be accepted in its entirety. Both microscopic study and the taste of the cooked fowl confirm the fact that, microscopically, visible degeneration does take place.

Considering the enormous growth and the wide extent of the refrigeration of foodstuffs, as well as the absolute lack of authoritative supervision of such frozen products before they are offered for sale, it seems most desirable that a careful study should be made to determine whether such alterations as have been noted affect the appearance and histological integrity of the flesh only, or whether, as has been asserted by some, the consumption of poultry after long periods of cold storage is not responsible for some of the obscure intestinal disorders and the imperfect metabolism from which modern humanity, especially the dwellers in large cities, are so apt to suffer.

The introduction to Mrs. Pennington's article is also of most important interest, and is as follows (p. 197):

While the preservation of food by cold has been in practical use for many hundred years, it has remained for the nineteenth and twentieth centuries to extend this industry to all parts of the civilized world and so successfully to commercialize the process of producing cold artificially that it is not only financially a success but is now indispensable to the food producer. Cold storage is entirely changing the character of the diet of certain tropical or semitropical peoples, and, judging from the results of the introduction of ice into the Philippines, to their betterment. To our outlying possessions we are sending refrigerated articles, but the colonies of other nations are supplying the mother country with immense quantities of produce and are developing resources which, without artificial refrigeration, would lie dormant.

Especially interesting in this relation is the report on cold-storage poultry sent by New Zealand to England. In 1905 this colony shipped 15,176 birds—almost exclusively chickens and ducklings. They were frozen at 18° to 22° F. and transported in cold rooms, the temperature of which was generally somewhat below 15° F.

To insure the character of the birds exported in a frozen condition the New Zealand department of agriculture has arranged to receive them alive at the four principal ports of that island, kill, pluck, pack, freeze, and store them for a charge of 4d. each, a sum which is lower than the producer would have to pay working independently. The department also inspects each bird and reserves the right to reject any which are unsuitable, it having formulated a series of requirements regarding age, weight, etc., to which all the producers are required to conform.

This method removes one great difficulty and source of danger in the refrigeration of food products, namely, improper and unclean methods of killing and preparing for storage, and, what is even more important, it guarantees such prompt deposit of the birds in the refrigerating rooms that any decomposition previous to storage is prevented.

Although it is impossible to obtain exact statistics on the subject, it is estimated that approximately from 75 to 90 per cent of all the poultry produced in the United States is, for a longer or shorter period, preserved in cold storage. While the number of ducks, turkeys, and geese is by no means small, chickens, of course, are greatly in the majority, and from the appearance of the cold-storage warehouses in our large cities it would seem to be almost a matter of routine that every chicken intended for market should sojourn there for a certain, or rather an uncertain, time.

Studies on eggs and on such fruits as the apple and pear show that the fit condition of the product when entered into cold storage, the temperature, humidity, and sanitary condition of the plant, the placement of the product, wrapped or otherwise, while in cold storage, the length of time kept, and the treatment in the retail market and by the consumer after the product leaves cold storage are all factors in determining the amount of deterioration in the product. Take butter, for example. The character of the cream from which it is made, its buttermilk content, the condition of the tub into which it is put, whether paraffined, salted, or brined, are all factors which affect the keeping qualities of the stored butter. Process butter, for example, is reported to have poor keeping qualities in cold storage. Oleomargarine is reported to have good keeping qualities. In the cold storage of apples, for example, the time and manner of packing, the time intervening before stored, the wrapping of each apple, together with other conditions and temperatures, have been found to influence the keeping quality. The ripening process can be retarded and the transfer of rot from one apple to another can be prevented by wrapping the apple or pear.

There has been considerable litigation in actions for alleged damage to various food products while kept in cold-storage warehouses, a number of which cases are grouped in the footnotes in connection with Allen *v.* Sommers (52 L. R. A., 106). The decisions in all such cases indicate that the question of temperature and sanitary conditions attending the operations of the cold-storage plants are determining factors in granting or refusing damages.

In view of all the above, the food-control officials of Kentucky desire to give unqualified support to the passage of a federal law which will require the various food products intended for and transported throughout interstate commerce to be labeled to show the length of time held in cold storage and the temperatures at which held. Such a measure should also look to the fitness of the meat, poultry, eggs, fish, fruit, butter, cheese, and so on, entered into the cold-storage warehouses and intended for interstate and foreign commerce, and should also apply to the sanitary condition of the cold-storage plant, refrigerating car, and the depot into which the original package of cold-storage products is received from interstate commerce and held.

This labeling will work some hardship, of course, but in the end it will result in bringing to the cold storage industries confidence of the consumer in this absolutely necessary method of food preservation.

There can be no legitimate objection to thus turning the cold-storage problems over by means of the plain label to all of the chemists, bacteriologists, refrigerating engineers, the trade, and the consumer to work out and adjust. And when the merchant is required to give the consumer the facts as to cold storage, it can be depended on that there will be a widespread effort to correct, as far as possible,

all of the problems which affect the quality of the products stored and to keep the stored products on the move to the market. Such method of labeling should be sufficient without a time limit, but if a time limit is fixed in the bill, such a limit should be based upon each individual product and the temperature and sanitary condition and other methods under which it is stored and not upon a blanket prohibitory limit, as contemplated in Senate bill 7649 before the committee.

The American cold-storage trade should join in the support of proposed labeling and sanitary provisions of law, for such a proposition is too fair to be successfully defeated in the end. By coming forward with cooperative effort to assist the Federal and State Governments in the correction of any abuses and in recognizing the rights which the people who eat the stored products have in the matter the present condition, a growing one, can be turned to good account. On the other hand, if those who see the necessity for certain governmental regulations of the cold-storage business are required to bring forth the worst examples of abuses, as was necessary in the fight for the food and drug laws of the country, such action, while securing the passage of federal, state, and municipal cold-storage laws, will at the same time shake the confidence of the consuming public both in home and foreign markets.

(The committee thereupon, at 12 o'clock meridian, adjourned to Thursday, May 12, at 10 a. m.)

THURSDAY, MAY 12, 1910.

COMMITTEE ON MANUFACTURES,
Thursday, May 12, 1910.

The committee met pursuant to adjournment.

Present: Senators Heyburn (chairman), Gallinger, Oliver, and Smith.

STATEMENT OF MR. CHARLES H. UTLEY, BOSTON, MASS.

The CHAIRMAN. Mr. Utley, you are familiar with this bill, I presume, that is under consideration by the committee?

Mr. UTLEY. I have read the bill.

The CHAIRMAN. Have you any objections to urge against it?

Mr. UTLEY. I have some objections to it; yes, sir.

The CHAIRMAN. We would be glad to hear them.

Mr. UTLEY. It is proper and natural that this bill, like all other measures, should first be considered from the standpoint of its object—what it proposes to accomplish if adopted—and whether existing conditions are such as warrant and make desirable such legislation.

This bill, similar in many respects to legislation which has been proposed in various States in connection with cold storage, apparently has been prompted by a desire to accomplish one of two results or a combination of both.

First. To reduce the selling price of perishable food.

Second. To protect the public from the possibility of consuming food that is likely to be injurious.

To classify in another way, one can be called mercantile legislation, the other health legislation. In this, as in almost every instance, there is an illogical, impracticable attempt to combine and mix these two propositions. They should be separated and considered independently.

If a time limit upon the storage of any article is proposed as a health measure, the reason is presumably based on the assumption that after the expiration of a certain period of time food has undergone certain changes which render it unfit for consumption. This as a broad general proposition is true; but no arbitrary time limit can be set which is applicable to all varieties of food or applicable under any and all circumstances and conditions to any one particular food.

To illustrate: Eggs in storage longer than about ten months deteriorate very rapidly and soon become very nearly valueless. Butter, cheese, macaroni, and numerous other articles could be kept two years and would not show sufficient deterioration to affect their being palatable or wholesome. On the other hand, certain eggs might not be put in cold storage until after they had been kept elsewhere under unfavorable conditions and these eggs might in two or three months time become worthless.

Other articles which might under proper conditions keep for a long period would only keep a short time if condition at time of storage was not good. A time-limit law is difficult to make practicable, for if it were desirable to hold goods longer than the time named as a limit, goods could be held a portion of the total time desired out of cold storage or a part of the time in one warehouse and part of the time in another warehouse.

Information as to the length of time that goods have been held in storage is not conclusive as to the age of article. This can only be ascertained by knowing the date of production of the article, and this is far more important and valuable information than the date of storage.

The Canadian commissioner of agriculture, J. A. Ruddick, states in his official report:

> Suggestions to limit the period of storage ignore the fact that the condition of the goods when placed in store is of infinitely greater importance than the length of the storage period.

No definitely stated time can effectually accomplish the result desired. Articles may become unfit for food in less time than the limit and they might be perfectly wholesome if kept for a longer period. The only proper limit is such time that they are wholesome regardless of whether they have been in or out of cold storage.

Our present rigid health laws with power given to officials to inspect and condemn whatever is not suitable for consumption seem to be sufficient to protect the public. If they are not it would be desirable to make them so.

It could not fairly and logically be limited to articles in cold storage; in this aspect of the case any reason justifying such a limitation would apply to any and all articles stored in any sort of a warehouse. The fundamental principle involved, in its bearing and relation to the perishable articles stored in a cold-storage ware-

house, is the same as that of any warehouse in its adaptation to the care and preservation of the articles stored.

It is simply the employment of methods best adapted to give best service and best results so far as the articles stored are concerned. Grain, cotton, wool, tobacco, dry goods, groceries, and other merchandise from the force of necessity require to be stored for various lengths of time, and are stored in warehouses so constructed and arranged as to keep the articles stored in the best possible condition and prevent as far as possible any deterioration.

It is this same fundamental principle and nothing more which is employed by a cold-storage house to protect and preserve perishable articles. If the principle is wrong to store any goods in cold storage, it is equally wrong to hold goods of any sort in storage, and criticism against the former practice and any restriction as to length of time which goods may be stored logically and fairly should apply to all.

If a time limit is placed what is to be done with the goods at the expiration of this time? If the goods are condemned and destroyed, would the destruction of a large quantity of perfectly wholesome food tend to make the cost of such food lower to the consumer?

If a dealer had to face a possible condition of being forced to sell at a great loss a large quantity of goods, on or before a stated date, would he be likely to conduct his business so as to have a surplus stock to draw from in time of scarcity?

As a matter of fact, comparatively few articles are held in cold storage even as long as a year, so that the practical effect on the business of cold storage would be of so very great injury, but the application of this proposed limitation simply to goods in cold storage is making a distinction which not only is apparently unreasonable and illogical and decidedly objectionable, but is the establishing of a principle which is likely to be most undesirable and possibly more far-reaching than would be at first imagined.

If such a law could be made and enforced, would it not be reasonable to anticipate laws limiting the time a person could hold real estate or any other property?

Presumably the object of labeling articles in cold storage is to give the consumer information as to the age of the article; information as to the length of time the article has been in cold storage by no means gives this information, as considerable time might lapse between the time of production and the time when goods went into storage, or considerable time between date of going out of cold storage and into consumption. It is almost, if not quite, impracticable to make results desired effective, as the branding of packages from which contents are taken before going to consumer gives no information to the consumer.

Mayor Gaynor, of New York, in his veto message on an ordinance requiring labeling of goods in cold storage, shows clearly the objections to this feature of the bill.

There has not been, so far as my knowledge goes, sufficient evidence to show that the operation of the cold-storage business has been in any way responsible for or instrumental in advancing prices, or to show that the health of the public has been unfavorably affected to warrant the enactment of such a bill as you have under consideration. Such feeling as has been aroused is largely due to a misapprehension and lack of a full knowledge of the actual facts. If any measure

should be desirable, the only measure likely to accomplish results desired would be to establish government inspection, such as favored by the Warehousemen's Association.

I submit with this a statement bearing on the general subject of cold storage, also a list of articles which are stored at various times by our company. It can readily be seen that there are many articles on this list that would undergo but little change which would affect their palatable or wholesome qualities. To classify these articles as adulterated would be most unreasonable—as unreasonable as to declare that wool, after being stored a year, should be considered as cotton.

The present cold-storage warehouse is simply the evolution from the farmer's or produce dealer's cellar where was kept the surplus make of butter or vegetables for such a time as the conditions permitted, for use when circumstances restricted or made impossible the production or raising of these articles. This evolution from the primitive method of preserving and holding perishable food to the present modern cold-storage warehouse, has been the result of the best thought and the most careful and often costly experiment of not only the capitalist but of the scientist in every department, as well as the architect and builder, and to-day it stands almost if not wholly unequaled as an example of a modern institution, the result of these combined efforts. It should be kept in mind that cold storage is simply one method employed to preserve certain articles of food—it is at the present time the best method known—and if restrictions are placed on this method, or if prohibited, other methods less desirable or effectual would be used, methods which the cold storage has supplanted to a great extent—such as the preserving of eggs by holding in brine, and by canning to a larger extent a great many other articles.

While there is a great variety of articles stored for a greater or less time in cold storage, the articles stored in greatest quantity are butter, eggs, cheese, poultry, fish, and at times certain cuts of meat. The reason for storing and the benefit gained by producer, owner, and consumer by the storage of any of these articles apply to all, and they are simply these—taking eggs as an illustration. During March, April, and May, the best quality and the largest quantity of eggs are produced, of the total amount of eggs produced in this country during the year at least 50 per cent are produced in the period named, and is far in excess of what can be consumed during that time. If no adequate and successful means existed to care for and preserve the surplus production several things would eventually result. There would be a greatly diminished production, for if it were necessary for the entire production in time of plenty to be consumed during that period, prices would be forced to so low a point as to be unprofitable to the producer; consequently, there would follow a smaller production of eggs, and this would also mean that less poultry would be raised. From the consumers' standpoint, without eggs kept in some way from the time of the year when the supply exceeded the natural consumption, they would probably sell for $1 a dozen, or more, as far as they sold at all in the early part of every winter.

The situation is similar to that of a community dependent for its water supply upon a stream. Where there is a great and over-

abundance of water during the spring months and a scarcity at other times, the only method to secure a sufficient supply is to hold back some portion of the water in a reservoir or there would not be a sufficient supply in time of drought. The cold-storage house simply acts as a reservoir, so far as the perishable articles therein stored are concerned, and in this function acts the same as other warehouses where cotton, wheat, tobacco, groceries, etc., are stored. The business of the cold-storage warehouses is confined almost exclusively to furnishing space for the storage of goods which are owned by a large number of firms and individuals, each acting independently as to the quantity of goods stored and the duration of storage. Any person desiring may avail himself of the opportunity of placing in storage such supplies as he may desire, which could be purchased when the quality of various articles is at its best and prices the lowest, and withdrawn when reenlargement of the family refrigerator. Now, as to the length of time that goods are stored. The natural limit to the length of time that any article is stored is a period somewhat less than the time that intervenes from one time of surplus productions to another. There is nothing to be gained by holding for a longer time. The actual time that goods are held varies greatly within this limit, and while influenced by conditions and circumstances, is controlled and governed entirely by the hundreds of different owners. There is no combination, no organization, influencing or controlling this feature of the business; it is practically and actually the result of each owner exercising his business judgment in disposing of the goods he owns, the same as any merchant exercises in disposing of the goods he deals in, a right which has, so far as I know, never been questioned or denied him. In actual operation with such a large number of owners, representing various views, a considerable quantity is being sold and withdrawn for consumption continually, and it is quite frequently the case that the owners of goods holding the longest make the least profit, often a loss.

It may not be realized by the public at large that to a wholesale dealer 2 cents per pound profit on butter or 2 cents a dozen on eggs is considered a large profit, and that the average profit covering a period of say five or ten years would be less than one-half this amount. As to the effect on goods stored, so far as quality and its food value is concerned, it must be borne in mind that perishable articles are still perishable whether in or out of cold storage. No one realizes this more than the dealer in these goods, and to him must be given at least the credit of not being so foolish as to keep his goods in storage for such a length of time that would cause a total loss, or for a length of time when they have so deteriorated as not to bring as much as they would if they went into consumption when in good condition. You can take my word for it that the produce dealers of Boston are a very able, shrewd set of men, and are not holding goods, paying storage charges and interest on money invested, beyond a time when they will sell for full market values, and this means when they are in good condition. While any imperfection in goods is usually attributed by the consumer to cold storage, almost invariably it is due to some other cause.

The CHAIRMAN. Now, are there any particular points that you would like to bring out?

Mr. UTLEY. The points that I would like to bring out are with regard to the time limit. I do not consider that it is a good healthy measure. I have covered that in my remarks. Now, so far as the second section of the bill is concerned in regard to the proposed methods of labeling, that does not—by giving the length of time that goods are in cold storage—that does not give the information that I suppose is desired, if any information is desirable, which is more the length of time when the goods were produced, because that would give no definite information—the length of time that they were simply in the storage.

The CHAIRMAN. I would say there that it would probably be provided in this bill that the date of the killing, the date when it is placed in cold storage, and the date when it is taken out, and if replaced, the date when replaced would probably be required, so that that would cover your objection there.

Mr. UTLEY. Of course, if there are going to be some changes in the provisions of the bill, probably some objections which I have will be removed. Mr. J. A. Ruddick, of Ottawa, Canada, says:

Suggestions to limit the period of storage ignore the fact that the condition of the goods when placed in storage is of infinitely greater importance than the length of the storage.

The CHAIRMAN. What difficulty is there in labeling goods?

Mr. UTLEY. What difficulty?

The CHAIRMAN. Yes.

Mr. UTLEY. Well, I suppose you mean objection to it?

The CHAIRMAN. Yes; what is the objection to it?

Mr. UTLEY. Well, there is no objection if it will give absolute information.

The CHAIRMAN. Why could absolute information not be given by a process of labeling?

Mr. UTLEY. Well, I can imagine a condition where goods may be taken out of cold storage and deteriorate after coming out of cold storage, and the cold storage will be in no way to blame for the subsequent condition of those goods, but having been marked in that way it would throw a reflection on the cold storage that didn't properly belong to it.

The CHAIRMAN. Suppose the date when it was removed from cold storage was put on the article, wouldn't that obviate your objection?

Mr. UTLEY. That wouldn't obviate it absolutely, because there would still be the possibility of an inference that the damage was done in cold storage. The Massachusetts commission, which has been investigating and inquiring very fully into our matters in relation to the high cost of living, have given a considerable space to the matter of cold storage, and in speaking of the matter of this particular bill they speak of it as follows:

A bill has been introduced in the United States Senate by Senator Lodge, chairman of the National Committee on Wages and Prices of Commodities (S. 7649), which provides that any article of food held in cold storage for more than a year shall be deemed adulterated. This proposal of a fixed time limit for holding food products in cold storage is open to objection. No arbitrary limit could be set which would apply satisfactorily to all varieties of food, because the period during which they could be kept in satisfactory condition by cold storage varies. In the case of eggs six months would be too short, and would prevent holding eggs over the interval between the period of abundance, which ends in the month of May, and the period of scarcity, which begins in

November. A period of one year would not interfere seriously with the legitimate features of cold-storage business, but on the other hand would have no appreciable effect for good. In general, the business interests of dealers who place goods in cold storage may be depended upon to adjust the periods of cold storage to the requirements of the consuming public.

The CHAIRMAN. What is that you are reading?

Mr. UTLEY. The Massachusetts report.

The CHAIRMAN. That is, the investigation in Massachusetts in regard to this matter, referring to this recently. We will have that. It would only duplicate it to read it into the record now.

Mr. UTLEY. You asked a question with regard to the branding of the goods and the dating of them. I will give my own views. They are speaking about the branding as being entirely impracticable.

The CHAIRMAN. Well, give your views on the subject.

Mr. UTLEY. I believe it to be entirely impracticable.

The CHAIRMAN. Why is it impracticable?

Mr. UTLEY. Because, as provided in the bill at the present time—I am referring to the present bill; of course if there are modifications——

The CHAIRMAN. Just disregard that. The form of the bill is to be determined by the committee afterwards in executive session, and taking the testimony in regard to gathering knowledge to enable us to frame a bill.

Senator OLIVER. We would like to hear from you, not only your objection to this bill which will undoubtedly be modified by the committee, but any objections which your experience leads you to make with regard to the proper kind of a bill.

Mr. UTLEY. Well, I will say in regard to that one feature—I say information as to the length of time that goods have been held in storage is not conclusive as to the age of the article. This can only be ascertained by having the date of the production of the article, and this is far more valuable information than the date of the storage.

Senator SMITH. Well, we had testimony here from Doctor Wiley to the effect that a certain period, even though the article went in absolutely fresh, there was a day beyond which, even though the article was kept frozen—there was a period beyond which it did become unwholesome, and this committee is laboring to get at how we can best find that out, when it does become deteriorated, and what would be your objection—is there any serious objection to your labeling the article when it comes in—the date of slaughter, the date of being put into cold storage, and then you have it labeled when it comes out, so that the public can be aware of the age of the article, and on the testimony of scientists, decide whether or not it has passed what is considered the limit of safety to use. I believe that is the object of the bill.

Mr. UTLEY. Taking up your statement there, in the first place, my understanding after reading Doctor Wiley's statement was that he did not say that it became unwholesome, but that it was not so palatable.

Senator SMITH. I believe that Doctor Wiley stated in conjunction with that, that when they became unpalatable it was in a measure unwholesome.

Mr. UTLEY. I think there would be a good many scientists of equal standing that would have some little different opinion on that question, as to whether certain foods are palatable or wholesome, or unwholesome. You take the matter of eggs; they are stored in cases, 30 dozen in a case. When they come out of cold storage they go to a dealer, and from the dealer they are taken out of the cases and go into small packages, and I do not see how the information will ever reach the actual consumer as to the date of the storage. It is going to require a tremendous force to do it.

Senator OLIVER. I confess that they are generally scrambled when they get to the consumer.

The CHAIRMAN. Is there any difference between that proposition and the proposition of the box of cigars, where it is prohibited that a box can be used again after once being emptied of the cigars—once the stamp has been broken, and the cigars gone, why, there is a penalty for refilling that box. Now, after a case of eggs is broken, why not have a law that provides that you shall not refill that box?

Mr. UTLEY. I understand that that only applied to stated packages. There can be nothing to prevent their being taken out and repacked in others. I have been engaged practically in the produce business ever since I was able to go in any business, and I see no way that you can practically accomplish giving the consumer the knowledge as to the age of an egg unless all this is branded.

The CHAIRMAN. Well, the suggestion that I have made as to the case where eggs are sold in the case, or out of the case, from the cases, rather, would there be any difficulty in branding the eggs?

Mr. UTLEY. I don't think there would be any difficulty in branding the eggs, but I don't think it would be very successful in giving the consumer the knowledge.

The CHAIRMAN. We notice in the examination of the pure-food law that the purchaser is always on the inquiry and become detectives, and the merchant is very careful about having anything that will not bear inspection.

Mr. UTLEY. I will take another case. Take the case of small fish that are stored in cases like smelts. They are taken out and sold, and I do not see any fish can be labeled in such a way that will give the consumer the information that they desire.

The CHAIRMAN. Why can not those cases be branded?

Mr. UTLEY. The cases can.

The CHAIRMAN. Well, the law prohibiting the refilling of cases would probably take care of that, would it not?

Mr. UTLEY. When they come to a dealer's place they are put on his stand and sold from there and they are not sold out of the case.

The CHAIRMAN. Well, they could be sold out of the case, could they not?

Mr. UTLEY. I do not think they could.

The CHAIRMAN. Would it not merely mean a little different method of packing, like cigars, for instance? You doubtless remember when the same question was raised as to the refilling of boxes. A good many people got into trouble by trying to avoid the law and a great many claimed it was impracticable for the local dealer, who

sells probably half a dozen cigars in the week; he couldn't, they soon found a way of doing it.

Mr. UTLEY. Now, isn't it impracticable to do it with fish?

The CHAIRMAN. I don't think so.

Senator OLIVER. Let me ask you with regard to cases particularly. Isn't the custom to use the cases over and over again?

Mr. UTLEY. No, it is not; but the custom is this: That when the eggs are taken out of cold storage in the fall, the dealers handle them and candle each egg, and put them into another case. He sorts out any eggs that show any indication of deterioration, and then they are sold in that way.

Senator OLIVER. Some sold as fresh eggs and some sold as omelet eggs; is that right?

Mr. UTLEY. Sometimes. It is a natural business instinct of a dealer not to send any bad eggs to anyone, because that would interfere with his trade.

Senator SMITH. I do not think that the question of eggs—so far as eggs is concerned, I know that there is a plan in my State that obviates any difficulty as to the egg. The shell of an egg is very porous, and there is one dealer that I know of that has a little indelible stamp, and every egg that he touches he dates it, and you can not get it off. You see the shell is so porous; but that would not apply to other commodities in cold storage. Take fish, for instance, you couldn't stamp them. Now, eggs are easily protected from any deception by stamping the shell, requiring that they shall be stamped on the shell, because that is indelible and the shell takes print just like paper.

The CHAIRMAN. You say that there is now a system of stamping an egg?

Senator SMITH. We have it out in our State.

The CHAIRMAN. Light enough not to break the shell?

Senator SMITH. Just touch it and it absorbs it, just like porous.

Senator OLIVER. Does the dealer do that or the farmer?

Senator SMITH. We require it. The man that don't do that we don't buy of him.

Senator OLIVER. It is the custom in some hotels to stamp eggs, but this stamp purports to give the date of the laying of the egg.

Senator SMITH. That is what we want.

The CHAIRMAN. They have been doing that for some time in hotels.

Senator SMITH. You can not obliterate it; it is absorbed by the shell just like the shell will absorb kerosene. If you put a box of eggs near a can of kerosene the eggs will absorb the kerosene.

The CHAIRMAN. Like existing penalties for perpetrating any frauds. a few punishments would probably prevent them from misprinting.

Senator SMITH. But how would you print fish or meat?

The CHAIRMAN. We have a witness here who will tell us how to brand fish and meat.

Mr. UTLEY. How would you brand a box of raisins, and here are a list of articles stored, turnips, and grapes, and cereals, and cauliflower, pickles, bananas, eggplant, sweetbreads——

The CHAIRMAN. That is an article I hope they will get the brand on—sweetbreads.

Mr. U... equal... do it, but ... 186

...y, lemons.

... there any difficulty in branding the pack-box or a bag, or the stem of a banana bunch, ...d? It is easy enough to provide that every-...t of packages. Now, is there any difficulty in ...ges?

...re is no difficulty, but it will entail a very great ...dy.

...N. You think it will?

Yes, sir.

...MAN. Is it not true now that a great many merchants have a ... ...t brand, or dating stamp on their goods?

Mr. UTLEY. Not the goods that they store.

The CHAIRMAN. Not at all?

Mr. UTLEY. No, sir.

The CHAIRMAN. They do not sell any goods that have a secret stamp on that tells the date?

Mr. UTLEY. We do not sell any goods.

The CHAIRMAN. You only handle goods for others?

Mr. UTLEY. Yes, sir.

The CHAIRMAN. And there are no dates, either in cipher or otherwise, on them?

Mr. UTLEY. Not to my knowledge.

The CHAIRMAN. What goods do you handle?

Mr. UTLEY. I can give you a list of goods that we stored for last year.

The CHAIRMAN. Would you file that list with us and testify from it as to the goods that you stored?

Mr. UTLEY. There is a list [indicating]. I haven't counted them up, but I should think that there were a hundred different articles.

The CHAIRMAN. And none of them bear any stamp in the nature of either a private mark or an open mark?

Mr. UTLEY. Not to our knowledge, except the numbers that we put on the lots—what we call storage numbers, designating other storage lots.

The CHAIRMAN. Does that contain a date?

Mr. UTLEY. That does not contain a date.

The CHAIRMAN. Now, is that a complete list of the things that you handle?

Mr. UTLEY. Substantially; it is intended to be.

The CHAIRMAN. Now, have you quantities on that list?

Mr. UTLEY. I have not the quantities on that list. I have the quantities on another list.

The CHAIRMAN. Will you kindly put that list in evidence that you have just referred to before going into any other matter, so that it will be in connection with your testimony.

List of articles stored in warehouses.

Poultry.	Apricots.	Parsnips.
Fish for bait.	Citron.	Butter.
Oranges.	Confectionery.	Provisions.
Pears.	Spinach.	Rice.
Berries.	Cabbage.	Beer.
Figs.	Onions.	Bulbs.

Syrups.
Gutta-percha.
Cider.
Preserves.
Grape fruit.
Oils.
Furs.
Leeks.
Clams.
Honey.
Chestnuts.
Hams.
Peaches.
Anchovies.
Cherries.
Dried fish.
Holly.
Peppers.
Rhubarb.
Sweetbreads.
Sponges.
Herbs.
Dried meats.
Game.
Oysters.
Lemons.
Cranberries.
California fruits.
Dates.
Evaporated peaches.
Currants.
Beans.
Potatoes.
Lettuce.
Asparagus.
Horse-radish.
Cheese.
Flour.
Macaroni.
Ferns.
Condensed milk.
Fruit juices.
Jellies.
Pickles.
Salad dressing.
Maple sirup.
Woolens.
Parsley.
Shrimp.
Crabs.
Bananas.
Cream.
Hops.
Sauerkraut.
Caviar.
Smoked fish.
Eggplant.
Laurel leaves.
Radishes.
Mushrooms.
Olive oil.
Wines.
Pickled meats.
Food fish, fresh.
Meat, fresh.
Apples.
Grapes.
Raisins.
Prunes.
Evaporated apples.
Nuts.
Pease.
Carrots.
Turnips.
Squash.
Melons.
Eggs.
Cereals.
Peanuts.
Plants.
Canned goods.
Yarn.
Apple waste.
Cauliflower.
Oleomargarine.
Maple sugar.
Skins.
Shallots.
Scallops.
Lobsters.
Buckwheat.
Cucumbers.
Lard.
Sausage casings.
Brussels sprouts.
Pickled fish.
Limes.
Smilax leaves.
Pineapples.
String beans.
Olives.
Candied fruits.
Smoked meats.

Mr. UTLEY. Let me make clear; I think this is the list that you referred to a while ago, the list of quantities. This is a list showing two years with the increase and decrease [indicating]. I would like to have it stated that these are the quantities received during the year, not the quantities at any one particular time. There have been most misleading statements made inferring that the quantities received during the year was the quantity on hand at one time.

[The following is the list:]

Receipt and delivery of goods at cold-storage warehouses, years ending March 31.

DELIVERY OF GOODS.

	1908–9.	1909–10.	Increase.	Decrease.
Receipts	99,078	91,331	.....	7,747
Lots	136,636	125,851	.....	10,785

GOODS RECEIVED.

Lots	35,435	28,605	.....	6,830
Packages	1,257,883	1,240,356	.....	17,527
Loose	221,413	203,864	.....	17,549
Cars unloaded	1,978	2,170	192	.....

Receipt and delivery of goods at cold-storage warehouses, etc.—Continued.

GOODS RECEIVED IN DETAIL.

	1908-9.	1909-10.	Increase	Decrease.
Poultry, freezer....pounds..	5,450,174	4,012,341	.....	1,437,833
Poultry, cooler....do....	82,178	204,755	122,577	.....
Game....packages..	3,271	3,256	.....	15
Fish, freezer....pounds..	2,326,380	2,584,540	258,160	.....
Fish, cooler....do....	569,326	437,395	.....	131,931
Fish, dried and pickled....do....	812,727	1,041,901	229,174	.....
Herring....barrels..	14,585	13,113	.....	1,472
Meat, freezer....pounds..	5,618,321	4,470,126	.....	1,148,195
Oranges and grape fruit....packages..	16,501	23,442	6,941	.....
Lemons....boxes..	12,570	10,006	.....	2,564
Apples....barrels..	46,705	73,281	26,576	.....
Apples....boxes..	29,937	30,358	421	.....
Pears, native....do....	13,908	12,196	.....	1,712
Grapes....packages..	533	3,138	2,605	.....
Berries....quarts..	9,272	7,968	.....	1,304
California and souther fruits....packages..	11,566	7,653	.....	3,913
Evaporated apples....pounds..	782,084	1,314,844	532,760	.....
Dried fruits....do....	2,124,958	1,083,298	.....	1,041,660
Nuts....do....	707,139	518,393	.....	188,746
Confectionery, etc....do....	193,517	46,448	.....	147,069
Produce....crates..	9,534	20,325	10,791	.....
Produce....barrels..	7,684	11,520	3,836	.....
Butter....packages..	325,078	298,751	.....	26,327
Butter....pounds..	16,524,388	15,333,498	.....	1,190,890
Cheese....boxes..	70,451	61,342	.....	9,109
Cheese....pounds..	4,188,822	3,349,469	.....	839,353
Cheese, foreign....packages..	2,674	3,469	795	.....
Eggs....cases..	403,660	414,438	10,778	.....
Eggs....dozen..	12,163,770	12,459,042	295,272	.....
Eggs, frozen....pounds..	560,770	731,291	170,521	.....
Provisions....barrels..	3,333	3,132	.....	201
Provisions....tierces..	2,951	1,676	.....	1,275
Flour and cereals....pounds..	79,355	41,665	.....	37,690
Macaroni, etc....do....	142,656	202,103	59,447	.....
Beer....half barrels..	11,320	7,354	.....	3,966
Ferns, etc....packages..	4,832	5,329	497	.....
Sirups and fruit juices....barrels..	2,210	1,558	.....	652
Sirups and fruit juices....gallons..	3,610	3,159	.....	451
Miscellaneous....crates and boxes..	5,864	5,966	102	.....
Miscellaneous....tierces, barrels, bales..	683	1,924	1,241	.....

The CHAIRMAN. Now, have you a list showing the quantities stored or received during each month?

Mr. UTLEY. No; I haven't that.

The CHAIRMAN. Could you furnish us with such a list? Other cold-storage plants have furnished us with those lists.

Mr. UTLEY. I will try and do that, Senator. I think that would give you what you desire [indicating].

The CHAIRMAN. We have two classes of inquiry, one covers the general storage and the other the period.

Mr. UTLEY. We have that compiled so far as the entire city of Boston is concerned, covering the question of eggs.

The CHAIRMAN. Will you give us that now?

Mr. UTLEY. We compiled that for the Massachusetts Commission, and it is included in their report, so if you are going to have that report it will be in that report.

The CHAIRMAN. Have you a copy of that report?

Mr. UTLEY. I have; so far as it applies to cold storage. I would like to put that in as evidence, and I would like to know if I can arrange to get this copy back, as it is the only copy I have. It is as follows:

The use of cold storage in the preservation of various kinds of food products, which has been developed greatly in recent years, has been

connected in the popular mind with the recent advance in prices. The business has been subjected to violent abuse in many quarters. It has been made a kind of scapegoat for the public excitement aroused by the increased cost of living. Drastic regulations for the prohibition of cold storage or its stringent regulation have been proposed. Cold storage has been characterized by a recent writer as "a sinister and mysterious factor in the cost of daily food."

The popular arraignment of cold storage accordingly involves two counts: That it increases prices and that it menaces public health. It has been charged that prices have been raised by the action of food speculators in putting goods in cold storage and holding them there for long periods, thus creating a shortage of supply and forcing an artificial advance of prices. The cold storage facilities have been utilized, according to this somewhat common opinion, for the purpose of exploiting the consuming public by this new device. It has also been charged that the public health has been injured through the consumption of food carried in cold storage until it has become unfit for human consumption. Thus the cold-storage business has been accused of manipulating the supply of food products in speculative fashion and of lowering their quality through the deteriorating influence of the storage process.

Much of the popular clamor about cold storage must be set down to ignorance and hysteria. Impartial inquiry into the methods of cold storage leads to the conclusion that the general principle is sound and beneficent. The Hon. James Wilson, Secretary of Agriculture, stated in his testimony before the subcommittee of the House of Representatives, investigating food storage and prices in January of this year, that—

> cold storage is a great blessing to humanity. It is a great blessing to be able to put meat, vegetables, fruit, etc., in cold storage where they will keep. There is no doubt about that.

Secretary Wilson remarked further, however, that cold storage—

> enables the capitalist when prices are high to fill his cold storage warehouse and hold his products in storage until prices are higher.

On the other hand, he pointed out that—

> if we had no cold storage and could not keep meat at all that way, it would tend to raise the price because there would be no way of doing it except keeping the animals alive.

Dr. H. W. Wiley, chief of the Bureau of Chemistry of the Department of Agriculture, also declared that cold storage is a great blessing to the public in many respects, when not abused.

The cold storage process is simply the application on a large scale of the principle of food preservation, as used in the cellar of the farm, or the ice chest of the home. The principle is the storing of food in the time of plenty for its later use in time of scarcity. It may be remarked that the canning of food products, which has developed to enormous proportions, is another application of the storage principle. Tinned storage preceded cold storage. The latter method is applied mainly to very perishable products, such as eggs, butter, poultry and beef, which otherwise could not be preserved for any length of time, but it is used also for a great variety of products.

The following list of articles stored in the Boston warehouses of one company indicates the wide scope of the business:

Poultry.
Oysters.
Apples.
Berries.
Dates.
Evaporated apples.
Spinach.
Lettuce.
Squash.
Butter.
Flour.
Peanuts.
Bulbs.
Fruit juices.
Apple waste.
Preserves.
Maple sirup.
Skins.
Leeks.
Crabs.
Buckwheat.
Hams.
Sauerkraut.
Cavier.
Pickled fish.
Holly.
Pineapples.
String beans.
Sponges.
Pickled meats.
Game.
Meat, fresh.
Pears.
California fruits.
Prunes.
Citron.
Confectionery.
Potatoes.
Turnips.
Parsnips.
Cheese.
Cereals.
Beer.
Condensed milk.
Yarn.
Cider.
Salad dressing.
Maple sugar.
Furs.
Shrimp.
Lobsters.
Chestnuts.
Hops.
Sausage casings.
Cherries.
Dried fish.
Smilax leaves.
Radishes.
Sweetbreads.
Candied fruits.
Smoked meats.
Food, fish, fresh.
Oranges.
Cranberries.
Raisins.
Apricots.
Currants.
Beans.
Carrots.
Onions.
Horseradish.
Eggs.
Rice.
Ferns.
Canned goods.
Gutta-percha.
Pickles.
Oleomargarine.
Oils.
Parsley.
Scallops.
Honey.
Cream.
Lard.
Anchovies.
Smoked fish.
Eggplant.
Laurel leaves.
Rhubarb.
Olive oil.
Wines.
Dried meats.
Fish for bait.
Lemons.
Grapes.
Figs.
Evaporated peaches.
Nuts.
Peas.
Cabbages.
Melons.
Provisions.
Macaroni.
Plants.
Sirups.
Asparagus.
Jellies.
Cauliflower.
Grape fruit.
Woolens.
Shallots.
Clams.
Bananas.
Cucumbers.
Peaches.
Brussels sprouts.
Limes.
Peppers.
Mushrooms.
Olives.
Herbs.

In his testimony before the commission Mr. Charles H. Utley, president of the Quincy Cold Storage Company, stated the general function of cold storage very fairly and clearly, as follows:

> It simply means that the storage covers the best means known at the present time for preserving perishable foods from the time of their great abundance to their time of scarcity. That principle seems to me to be so plainly desirable that it is hardly open to contradiction or the need of any argument. It is the same principle that enters into the nature of the squirrel in storing up a little horde of nuts from the time he has an opportunity of getting them to the time of scarcity. It is the same principle that the farmer uses in putting his hay into his barn and feeding it out to his cattle when it is scarce, and grain also. There is nothing different in the fundamental principle of cold storage from the fundamental principle involved in the storage of any article. That is, warehouses are built with the best facilities for the storage of cotton, for grain, for wool, for groceries, and other articles, and a cold-storage house is simply built in the best way possible for the preservation of the perishable articles.

The working of cold storage may be illustrated most clearly in the case of eggs, butter, and poultry. The season of abundant production of eggs covers three months in the spring—March, April, May.

Eggs laid in this time are superior in quality and have good keeping properties. Eggs produced in June, July, and August are less adapted to storage, as they are much exposed to the heat before they can be got into storage. The eggs laid in March, April, and May are stored and are then available for consumption during the fall and winter months when eggs are not produced in any considerable quantity. Butter also is produced most plentifully in the cool spring months when the grass is fresh and the cows in most healthy condition. Butter produced in May and June, the season of plenty, is stored and later taken out for consumption in the winter months, the season of scarcity. Similarly, chickens are put on the market in large numbers in the fall, when chickens hatched in the spring and grown during the summer are slaughtered and dressed. The over supply of chickens at this season is sent to the cold-storage warehouses and are there preserved for later sale during other parts of the year, when the supply of fresh poultry is cut off.

The effect of cold storage on prices is in general to make them steadier, preventing extreme fluctuations, either upward or downward. The supply is reduced by the storing of products in time of plenty and the price consequently does not fall so low. The supply is increased by the marketing of storage products in time of scarcity, and the price consequently does not rise so high. It has been correctly stated by a representative of the cold storage interests that:

> Before cold storage facilities were available, during the time of plenty prices were extremely low for the producer. Conversely, during the season of scarcity, prices rose rapidly and were extremely high to the consumer. Many classes of perishable products were not procurable even at the extreme prices. The cold storage warehouse acts as a balance. It insures that a fair supply of the products of plenty, produced in their seasons, shall be available throughout the year. It materially lessens the extreme between the former minimum and maximum selling prices, which is a decided advantage to both producer and consumer.

Another beneficial effect of cold storage is to increase the production and thus, of course, to lower the price of certain commodities. It does this by extending the period over which perishable products can be marketed, and thus stimulating a larger volume of production. The operation of cold storage in increasing the volume of production of perishable goods is well explained by Mr. Frank G. Urner in a report upon cold storage as follows:

> It is evident that if there are no means of preservation of a commodity beyond the limited period of its production, so that all the product must be consumed within that period, the production of that commodity will, so far as inevitable variations permit, be limited to the amount that can be so disposed of at a price high enough to yield an average profit to the producer and to necessary distributing agencies. It is equally evident that if means of preservation of surplus are available, so that the commodity may be sold to satisfy an effectual demand during a longer period, a larger quantity may be profitably produced, thus adding to the total food supply. Under natural conditions of trade the tendency is therefore to increase production to the limit of quantity that can be profitably sold, not only during the season of overproduction—or greatest production—but during the entire period of production and possible preservation.
>
> If this season of practical preservation extends to the following season of flush production then it follows that the opportunity for profitable production has reached its maximum and the tendency will be to produce the maximum quantity that can be consumed during the period at the lowest average price

that will induce production. Considering these facts, it is quite evident that after the scale of production of a perishable article has been built up to a volume requiring a full year for its consumption at profitable prices, because of the development of facilities for preservation during that period, any restriction of these facilities, by forcing the sale of the entire product during a shorter period, would first result in a lower price to producers during the season of flush production, and a higher price or an entire lack of offerings during the period of restriction; but second in a decrease of production to the quantity that could profitably be sold during the season of greatest production and restricted preservation.

The variability in the production of the chief commodities of cold storage, which apart from this method of preservation must result in periodic shortage of supply, and thus in reduced production over the entire period of a year, is shown by the statistics of the egg trade of New York and Boston. The figures are as follows:

Egg trade, year ending February 28, 1910.

NEW YORK.

Month.	Receipts.	Storage first of month.	Storage input or output.	Range of prices.	
				Fresh.	Prime western storage.
1909.	*Cases.*	*Cases.*	*Cases.*	*Cents.*	*Cents.*
March	316,141	.....	38,000	18½–22½	.....
April	636,423	38,000	224,000	20 –25½	.....
May	603,583	262,000	235,000	20½–23½	.....
June	519,330	497,000	193,000	20½–23½	.....
July	364,955	690,000	37,000	21 –24	.....
August	325,591	727,000	20,000	21 –26	24½–25½
September	317,280	707,000	47,000	22 –27½	24 –26
October	248,143	660,000	88,000	24 –30	24 –26
November	177,350	572,000	159,000	26½–37	22 –26
December	167,929	413,000	185,000	28 –38	21 –26½
1910.					
January	137,408	228,000	145,000	32 –42	26 –28
February	232,404	83,000	82,000	24½–32	23 –27½
Total	4,246,537	.....	.....	a 26	a 24½

BOSTON.

1909.					
March	163,085	.....	18,196	22 –27	.....
April	221,295	18,196	94,728	20½–25	.....
May	245,608	112,924	125,054	24 –25	.....
June	196,810	237,978	89,652	24½–27	.....
July	114,573	327,630	12,109	27 –32	.....
August	105,124	339,739	7,443	32	24½–25½
September	93,742	332,185	26,942	32 –34	24½–25½
October	67,567	305,243	53,918	34 –45	24½–25½
November	56,978	251,325	66,424	44 –50	22½–25½
December	41,713	184,901	74,701	43 –48	22½–26
1910.					
January	25,074	110,200	74,447	36 –42	25½–27½
February	66,307	35,754	33,500	28 –36	22½–27
Total	1,397,876	.....	.....	a 33	a 25

a Average.

The effect of cold storage on quality has been much discussed. It is difficult to make precise statements on this point. Undoubtedly there takes place some deterioration of taste as a result of cold storage, but if goods are properly handled there seems to be no serious damage to

health. The effects of cold storage on quality differ widely for various commodities. Cheese, for example, can be successfully preserved without deterioration of quality for a considerable period of time. The storage period of butter is shorter; that of eggs is shorter still. Dr. Harvey W. Wiley has stated that eggs can be properly preserved in cold storage for about nine months. The length of time in which poultry can be kept in satisfactory condition can not be stated with any definiteness.

The United States Department of Agriculture is conducting investigations with a view to determining the effects of cold storage on different products and the normal period of storage. The results of these investigations when completed will doubtless afford conclusive answer to the questions arising in this connection. The only official investigations, the results of which have thus far been made public, relate to the effect of cold storage on poultry. Dr. Mary E. Pennington, of the Bureau of Chemistry of the Department of Agriculture, published in 1907 a report of investigations on this subject. The investigation disclosed certain changes in the condition of poultry kept in cold storage for periods exceeding a few months. Miss Pennington offered the following conclusion regarding the need of further investigation:

> Considering the enormous growth and the wide extent of the refrigeration of foodstuffs, as well as the absolute lack of authoritative supervision of such frozen products before they are offered for sale, it seems most desirable that a careful study should be made to determine whether such alterations as have been noted affect the appearance and histological integrity of the flesh only, or whether, as has been asserted by some, the consumption of poultry after long periods of cold storage is not responsible for some of the obscure intestinal disorders and the imperfect metabolism from which modern humanity, especially the dwellers in large cities, are so apt to suffer.

In 1907 a report on poultry kept in cold storage was made, by Herbert R. Brown, for the Massachusetts state board of health. The general conclusions of this investigation were that poultry kept at temperatures ranging from 5° above the freezing point to 14° below undergoes no decomposition as a result of bacterial activity; that freezing temperatures as low as 14° below the freezing point destroy a large percentage of the bacteria present, but will not affect the more resistant ones; that when the tissues are thawed they become moist by the melting of the ice crystals, and in this condition bacterial growth is hastened and decomposition hastened; that undrawn chickens placed in cold storage show much smaller numbers of bacteria than drawn fowl; that under given conditions decomposition proceeds at a much more rapid rate in a thawed drawn chicken than in an undrawn one. These investigations are only partial, and have not settled conclusively the important questions arising in connection with the effects of cold storage upon quality of food products and on the public health. For definite answers to these questions one must wait until the investigations now in progress under the direction of the United States Department of Agriculture have been completed.

The alleged abuses in the cold-storage handling of food products are partly economic and partly sanitary. The economic abuse as charged consists in the speculative withdrawal of food products from the market, in order to force up prices. The sanitary abuse consists

in the holding of goods for such period that their quality deteriorates, rendering them unfit for consumption. As measures of dealing with the two evils complained of, two proposals have been urged: First. that a time limit be placed upon the storage of food products; second, that storage be branded or marked in such a way as to show the time of entry into storage and of withdrawal. The former proposal was advocated by a committee of the chamber of commerce of Washington, D. C., which recently investigated the prices of commodities. A bill introduced in the Massachusetts legislature this year, house No. 979, would restrict the storage of food products to a period not exceeding six months. A bill recently introduced in the United States Senate by Senator Lodge, chairman of the National Committee on Wages and Prices of Commodities, Senate No. 7649, provides that any article of food held in cold storage for more than a year shall be deemed adulterated. This proposal of a fixed time limit for holding food products in cold storage is open to objections. No arbitrary limit could be set which would apply satisfactorily to all varieties of food, because the period during which they could be kept in satisfactory condition by cold storage varies greatly. The period of six months would be too short in the case of eggs, and would prevent holding eggs over the interval between the period of abundance, which ends in the month of May, and the period of scarcity, which begins in November. A period of one year would not interfere seriously with the legitimate features of cold storage business, but on the other hand it would have no appreciable effect for good. In general the business interest of dealers who place goods in cold storage may be depended upon to adjust the period of storage to the requirements of the consuming public. Nothing whatever is to be gained by holding goods in storage for an undue period until the goods become spoiled. So far as the price of cold storage products is concerned, it would seem that the individuals engaged in the business of food distribution could be trusted to take goods out of storage at the time best suited to the needs of the consuming public. So far as the health question is concerned, any menace to the general interests through the holding of goods for undue periods could be met by a system of inspection. It is as easy to detect and condemn spoiled food in storage plants as it is to do this under other conditions in the general market.

The scheme of branding cold-storage products appears to be entirely impracticable. This plan is embodied in the second section of the Lodge bill, which provides that articles of food held in cold storage shall bear a label plainly stating the period of time during which the article has been held in cold storage. Its difficulties are conspicuously evident in the case of eggs. It would be possible, of course, to brand the cases of eggs with the date of entry and removal, although even this would entail a considerable expense; but the eggs when taken from storage are usually candled and assorted by the jobber or the retailer. It is hard to see how the identity of each separate lot of eggs could be preserved during this process. If the eggs were not handled at all and were sold in the original packages to the retailer, still the customer would not be able to identify a cold-storage egg or know the time of storage unless each egg were branded upon receipt of storage and upon withdrawal. It would require an enormous force of markers and branders to do this. Similar

difficulties arise in the case of meat, which is stored in bulk and later cut in small portions for sale to consumers. In any event the necessity of branding would add greatly to the expense of handling products in cold storage, and must result in increased price of food to the consumer. It may be noted that Mayor Gaynor, of New York, recently vetoed, on the ground of constitutional and practical objections, a "tagging" ordinance passed by the board of aldermen.

The suggestion has also been made that the operations of cold-storage companies should be restricted to a purely warehouse business. This means that they should not be permitted to own any of the goods which they handle. There seems to be no need of enacting such a measure. It is not the general practice of cold storage companies to buy and sell goods. They play a rôle analogous to that of the common carrier of goods, acting as public agencies for the storage of commodities owned by third parties.

In conclusion it should be stated that the cold storage establishments are performing a useful and legitimate function in the distribution of food products. This fact was recognized by the Washington committee, to which reference has already been made, and by the Ohio commission on the cost of living, which has just presented its report. The latter body characterized cold storage as a blessing, but recognized the possibility of abuses in this field, and recommended government regulation to promote sanitation and prevent monopoly. Canada has subsidized cold storage warehouses, through an act of April, 1907. Fortunately there is no need of adopting such a measure in this country. The cold storage business in the United States has, without government encouragement, reached large proportions. The amount invested in cold storage business in Massachusetts is about $10,000,000. A single company in Boston operates seven cold storage plants, with cooling space amounting to 9,500,000 cubic feet. The business of the cold storage companies appears to be conducted in an admirable manner. The greatest care is taken to adjust the temperature to the requirements of the different commodities, to maintain the proper degree of moisture in the air, and to secure a free circulation of air between the boxes and crates in which the goods are stored. Improvements in the processes of handling goods are constantly made, and the entire business is in a state of evolution or progress. Mr. Utley, the president of the Quincy Cold Storage and Warehouse Company, states:

> Our company, starting in a small way, has developed so that at the present time we cool more space than any other company in this country, and this means more than any company in the world. It has been to us a matter of some pride to feel that we have put Boston in the lead in this business. It has been a considerable factor, beneficial to the commerce of the city and State, and we feel, taking all into account, that we are deserving of a certain amount of consideration, the same sort of consideration which any and all business interest is deserving in the Commonwealth that contributes by its activities to the general welfare, benefit, and support of the community.

This business certainly deserves fair treatment. That should go without saying. It would be fatuous and shameful to hamper this business by legislation prompted by the excitement attendant upon the recent advance of prices.

Inspection of the cold storage plants by the health authorities, state or local, would, however, impose no hardship on this business, and would protect the public against possible abuses. At present, in the

city of Boston, there is no inspection of cold storage plants whatever. Dr. Alexander Burr, of the Boston board of health, stated this fact in his testimony before the commission:

Q. Do you inspect cold storage articles?—A. We do not.
Q. You don't go into cold storage at all?—A. No.
Q. Is there any health inspector in town that goes into cold storage?—A. No cold storage, without it would be asked for.
Q. What?—A. No cold storage inspection unless it is asked for.
Q. Unless it is asked for?—A. And it might be in the way of some complaint; if there was a complaint made it might be inspected.

There seems, furthermore, to be some doubt as to the power of the health officials to inspect cold storage plants without enabling legislation. The commission is of the opinion that such legislation should be enacted authorizing and requiring local boards of health to make regular inspection of cold storage plants.

Another measure of protection for the public which commends itself to the judgment of the commission is a law prohibiting, under penalty, the sale of cold storage articles as fresh goods. Such a measure would discourage a fraudulent practice which is harmful both to consumers and to honest dealers. The commission is aware that without branding or marking of cold storage goods, which is impracticable, the enforcement of such a prohibition would be difficult, but its mere presence on the statute books would have wholesome deterrent influence. It would check, if it did not stop altogether, the false sale of cold storage products. Ultimately, we believe, it will be found expedient to institute a system of federal inspection of cold storage warehouses. The greater part of cold storage business is of an interstate character, and can be controlled effectively only through national legislation. A measure providing for national inspection of this business without restriction as to time of storage or requirement as to branding goods would appear to offer the best solution of this problem. Such legislation is not opposed by the cold storage interests. Representatives of the American Warehousemen's Association, at a meeting held February 25, in Washington, adopted resolutions favoring federal inspection, as follows:

(2) *Resolved*, That careless, conflicting legislation on the part of State or city can work much injury not only to the warehousemen but to every one in any way connected with the production, sale, or consumption of any perishable product which might be stored. That, if legislation is necessary, it should take the form of national legislation, as its business is largely interstate and uniformity is essential.

(3) That national legislation and supervision, based upon adequate investigation by the federal authorities as to its effect on prices of food products and the public health, and which would safeguard the interests of the public in an intelligent and logical manner, would receive the hearty cooperation of all cold-storage warehousemen.

The CHAIRMAN. Do you handle fowl?

Mr. UTLEY. We store fowl in our warehouse.

The CHAIRMAN. How long do they remain in cold storage with you?

Mr. UTLEY. It is rare that they remain over six or eight months.

The CHAIRMAN. That is, chickens and turkeys, undrawn?

Mr. UTLEY. Undrawn, yes, sir.

The CHAIRMAN. What other birds besides chickens and turkeys?

Mr. UTLEY. Well, what would come under the head of game, that would be about all.

The CHAIRMAN. Is the list there for game?

Mr. UTLEY. Yes, sir.

The CHAIRMAN. Then, in that connection, you will furnish us with a statement by the month?

Mr. UTLEY. I will endeavor to do that; I am not quite familiar with our internal arrangement on that. I think it is going to be pretty difficult to give a statement of our months, but I think I can do it, and I will do it.

The CHAIRMAN. Do you store beef or mutton?

Mr. UTLEY. We store some beef and mutton; yes, sir.

The CHAIRMAN. In what quantities?

Mr. UTLEY. The amount stored during the year in meat—for the year just ending was 4,000,470 pounds.

The CHAIRMAN. What is the average length of time that that is in cold storage?

Mr. UTLEY. I think the average would not exceed four months.

The CHAIRMAN. What is the maximum?

Mr. UTLEY. I should say six months.

The CHAIRMAN. Now, where do you get that meat; that is, where does it come from?

Mr. UTLEY. Most of that meat is western dressed meat.

The CHAIRMAN. Come from cold storage in the West?

Mr. UTLEY. It comes—well, in one sense it comes from cold storage, for all meat has to be for some time in cold storage.

The CHAIRMAN. You do not know how long it has been in cold storage before it came to you?

Mr. UTLEY. No, sir. I would like to say that almost all the meats we store in Boston are stored by dealers or by restaurant or hotel keepers, of special cuts of meat which are used principally to supply summer hotels with meat during the summer season.

The CHAIRMAN. The hotel trade?

Mr. UTLEY. Yes, sir.

The CHAIRMAN. Now, do you make any inquiry at all as to the condition of the meat when it comes to you?

Mr. UTLEY. We have the result of our examination of it to see whether it is in good condition or not.

The CHAIRMAN. Do you make inquiry to see whether or not it has been in cold storage before it comes to you?

Mr. UTLEY. No.

The CHAIRMAN. You have no method of inspecting it in that regard?

Mr. UTLEY. It has passed government inspection, of course, before it comes to us; whether slaughtered in or out of the State, it has been inspected.

The CHAIRMAN. Does the State inspect all meats that are received by your cold storage?

Mr. UTLEY. No; but they make an examination at the slaughtering house of all meats that are slaughtered in the State.

The CHAIRMAN. But you get no record of meat that comes to you from outside of the State?

Mr. UTLEY. No, sir; except the government inspection——

The CHAIRMAN. Except what?

Mr. UTLEY. The government inspection tag.

The CHAIRMAN. Now, have you any record of those tags—of government inspection on meat that comes from without the State?

Mr. UTLEY. No, sir; we make no record of it.

The CHAIRMAN. You make no record of it?

Mr. UTLEY. No.

The CHAIRMAN. Now, what proportion of your meat does come from without the State?

Mr. UTLEY. I should think at least three-quarters of it comes from outside of the State.

The CHAIRMAN. Now, was that beef that you gave?

Mr. UTLEY. You said beef or mutton, and I had in mind beef and mutton when I spoke.

The CHAIRMAN. Now, is there any pork comes to you?

Mr. UTLEY. Yes, sir.

The CHAIRMAN. What quantity?

Mr. UTLEY. Pork, of course, comes under two heads—salt and fresh.

The CHAIRMAN. Give us the fresh.

Mr. UTLEY. The pork is included in the figures that I have given you under the head of meat.

The CHAIRMAN. Now, about sweetbreads and those by-products of meat. What quantity of those do you handle?

Mr. UTLEY. Comparatively small.

The CHAIRMAN. What figures would you call comparatively small?

Mr. UTLEY. In this list here they are all classified under the head of meat. I could ascertain definitely if you want me to do so. I would say it wouldn't be 5 per cent of the total amount.

The CHAIRMAN. The by-products.

Mr. UTLEY. Yes, sir.

The CHAIRMAN. Livers and sweetbreads?

Mr. UTLEY. Including livers and sweetbreads, possibly 10 per cent.

The CHAIRMAN. And tenderloin steak?

Mr. UTLEY. Tenderloins we classify under the head of meats. I should think, if you include all of those fancy cuts of meat, I would say somewhere between 15 and 20 per cent.

I would like to say this, that personally and as I believe representing the cold-storage business of the country, that we are not opposed to any legislation that circumstances seem to make necessary to give the public information. Its practical results would be beneficial to us. It is only the imposing of conditions which seem to involve a great deal of work and considerable expense that from our view point would accomplish what is desired. A system of inspection seems to be the most desirable and the most practical method. The condition of the goods is the principal point. If you place any time limit the assumption is that goods are wholesome and all right up to that time, and that they are bad after that time. You take two barrels of apples that have been in storage the same length of time, and within the time limit one of the barrels would be absolutely decayed and the other would be good. Now, the natural inference is that if it hasn't been stored up to the limit that they are both good, but they are not; the time limit doesn't accomplish the same results.

The CHAIRMAN. Have you a system of storage by which you can distinguish the old from the new in storage, or do you put them in

generally all together, so that each item would have to be inspected separately?

Mr. UTLEY. We store the lots as they come in—those owned by one party together. A carload of butter might possibly contain some butter that had been made longer than the other. The same way with a carload of eggs, a carload of apples; we store those as a lot altogether.

The CHAIRMAN. So that in that lot there might be some that had been produced three months before you received them, and other portions of the same lot that had been produced six months before?

Mr. UTLEY. There would be that possibility.

The CHAIRMAN. And in meats the same?

Mr. UTLEY. Yes, sir. Now, I would like to call your attention to this fact. Take the matter of cheese. You contemplate in this bill that at the end of a fixed time that goods are deleterious, are adulterated. Now, there are a great many goods where their wholesomeness and their palatableness is as good at the end of a year as any time, and it seems absolutely unreasonable to call those goods adulterated when they are not adulterated, to make them liable to be confiscated and destroyed. Many cheeses do not ripen up to their full best condition under two years. And you take butter. While it is rarely kept longer than a year, if it were kept two years it would be, under the present method of keeping, just as wholesome and just as palatable, almost, as it would at the end of a year.

The CHAIRMAN. What quantities of butter do you carry?

Mr. UTLEY. The total amount that we stored last year was 15,000,000 pounds.

The CHAIRMAN. Is that the average stock on hand during the year?

Mr. UTLEY. No; that represented the total amount taken in and out in one year.

The CHAIRMAN. What is the maximum time that you carry butter?

Mr. UTLEY. The maximum time is June to the following April or May; that is the maximum time; the average time would be about four or five months.

The CHAIRMAN. You do not know how long that had been in storage at all before it come to you?

Mr. UTLEY. No.

The CHAIRMAN. It comes in carload lots, does it not?

Mr. UTLEY. Very largely.

The CHAIRMAN. Where do you draw that from—from what section of the country do you draw that butter?

Mr. UTLEY. Well, in Massachusetts most of our butter supply—the largest supply comes from what we term the Western States. We have a considerable quantity from New York and Vermont.

The CHAIRMAN. Does that come from cold storage?

Mr. UTLEY. Very seldom. It generally comes direct from the manufacturers to us. There are occasionally times when a dealer in Boston will store some of his supplies in Chicago, and then subsequently bring it to Boston and store for the rest of the time in Boston.

The CHAIRMAN. Do you send stuff for cold storage elsewhere from your establishment at all?

Mr. UTLEY. Very rarely. We never do it ourselves. The movement of our goods in and out are entirely dictated by the owner.

The CHAIRMAN. I think that is all.

STATEMENT OF MR. ALBERT M. READ, OF WASHINGTON, D. C.

Mr. READ. May I have just a moment?

The CHAIRMAN. Certainly.

Mr. READ. I have some papers that you asked me for at the last meeting. You asked me for a table showing the number of cases of eggs and pounds of butter in the 30 houses that we represent, and which we make reports for, and I have given them to you for two years.

The CHAIRMAN. By the month?

Mr. READ. Yes, sir. That shows the amount of eggs and butter on hand the 1st of each month.

Report showing cases of eggs, of 30 dozen each, and pounds of butter on storage in 30 cold-storage warehouses on the first of each month of the years 1908 and 1909.

	Eggs.		Butter.	
	1908.	1909.	1908.	1909.
	Cases.	*Cases.*	*Pounds.*	*Pounds.*
January	485,028	261,641	28,926,896	30,748,635
February	153,467	38,449	17,884,330	23,101,270
March	5,883	503	11,134,341	15,859,180
April	134,049	90,227	6,354,958	6,161,765
May	991,471	681,782	2,490,052	3,044,903
June	1,669,154	1,408,359	7,060,089	3,169,155
July	2,032,754	1,933,488	32,543,706	24,541,791
August	2,016,391	2,036,515	56,065,430	42,674,548
September	1,934,273	2,022,253	64,552,394	49,717,848
October	1,671,765	1,890,521	66,569,054	49,120,797
November	1,246,421	1,577,250	57,397,813	45,175,092
December	731,006	1,197,618	44,194,739	37,011,425

Mr. READ. I have also, for your consideration, two tables, one on eggs and one on butter, showing in the case of eggs, from April, which is the month—the beginning of eggs coming into cold storage until the next April, and it shows it in numbers as it comes in—as the amount swells, and as it goes out through the two years, and butter also.

Table showing cases of eggs, of 30 dozen each, on storage in 30 cold-storage warehouses on the first of each month from April 1, 1908, to March 1, 1910.

1908.	Cases.	1909.	Cases.
April	134,049	April	90,227
May	991,471	May	681,782
June	1,669,154	June	1,408,359
July	2,032,754	July	1,933,488
August	2,016,391	August	2,036,515
September	1,934,273	September	2,022,253
October	1,671,765	October	1,890,521
November	1,246,421	November	1,577,250
December	731,006	December	1,197,618
1909.		**1910.**	
January	261,641	January	602,573
February	38,449	February	172,716
March	503	March	4,119

Table showing pounds of butter on storage in 30 cold-storage warehouses on the first of each month from June 1, 1908, to May 1, 1910.

1908.	Pounds.	1909.	Pounds.
June	7,060,089	June	3,169,155
July	32,543,706	July	24,541,791
August	56,085,430	August	42,674,548
September	64,552,394	September	49,717,848
October	66,569,054	October	49,120,797
November	57,397,813	November	45,175,092
December	44,194,739	December	37,011,425
1909.		1910.	
January	30,748,635	January	23,742,779
February	23,101,270	February	15,749,749
March	15,859,180	March	11,123,791
April	6,161,765	April	4,703,933
May	3,044,903	May	808,510

Mr. READ. There was one other table you wished me to get, and that was the number of other classes of goods that I have been unable to get at the present time, and it will probably take me some time, if I am able to get it at all.

The CHAIRMAN. Will you please file that with us when you get it?

Mr. READ. Yes, sir.

STATEMENT OF MR. CARLTON H. REEVE, OF CHICAGO, ILL.

The CHAIRMAN. Mr. Reeve, what is your business?

Mr. REEVE. Manager of the B. F. Cummins Company, Chicago, manufacturers of perforating machinery.

The CHAIRMAN. Now, you may state the character of the perforating machinery, and the purposes for which it is made.

Mr. REEVE. One of the principal purposes is for dating, or otherwise marking labels, tags, wrappers, and so forth, that are used in packing or marking food products.

The CHAIRMAN. Now, will you just present your method there in your own way until we find it necessary to interrupt you?

Mr. REEVE. [Exhibiting book of samples.] This is a book used by our salesmen. That label is used for dating or canceling beer stamps, but that has nothing to do with this.

The CHAIRMAN. Just take each one as you come to it and tell us what it is, and where it is ciphered state it, and where it is open state it.

Mr. REEVE. Do you wish the name of the concern?

The CHAIRMAN. Yes; the name of the concern.

Mr. REEVE. Well, here is the Jacob Ruppert label, used on their beer, which is perforated with a cipher date, reading "6th day of March, 1907." You do not wish me to go through these?

The CHAIRMAN. I want you to go generally through those three products that you have a record of there.

Mr. REEVE. Here is a record of the T. S. Schneider Preserving Company.

The CHAIRMAN. Is that an open label or in cipher?

Mr. REEVE. A cipher date perforated in it.

The CHAIRMAN. Now, just state if they use it.

Mr. REEVE. They have used our machines at several of their plants for a number of years for dating their labels, and also for indicating

the particular plant or factory that put up the goods. Is there any particular line you want?

The CHAIRMAN. I want to get a general line of those concerns that do date their products.

Mr. REEVE. Here is a label of Bishop & Co., at Los Angeles, that they use on their soda crackers; the date is in cipher by perforations.

The CHAIRMAN. Now, first state whether or not you came here under subpœna?

Mr. REEVE. I did. Here is a label of Lutz & Schram Company, Allegheny, Pa., that they use.

The CHAIRMAN. Is it in cipher or open?

Mr. REEVE. It is in cipher—a perforated date.

The CHAIRMAN. Just pass from one to the other.

Mr. REEVE. Here is a label of the William Henning Company which they use of their pickles, dated by perforations in cipher.

The CHAIRMAN. That is the kind of information. Now, you can pass from one to the other.

Mr. REEVE. Here is a label on the malted milk department of the Borden Condensed Milk Company. It is used on the malted milk that is put up at their plant at Elgin, Ill. It is perforated with a cipher date, and other information in cipher concerning the particular batch of milk that came out—the kettle. They sometimes fill their kettles several times a day, and this would indicate which batch it was, whether it was the second, third, or fourth batch.

Senator OLIVER. How do you mean by filling their kettle?

Mr. REEVE. They fill their kettles——

Senator OLIVER. Oh, kettle?

Mr. REEVE. Yes, sir. So that if some of it indicates a bad condition they know that all of that kettle must have been that way.

The CHAIRMAN. The grade of the milk is indicated?

Mr. REEVE. It is this powdered malted milk. Here is a wrapper of the Rocos Brothers' chocolate drop, dated in cipher. Here is a label of bromo seltzer, dated in cipher.

The CHAIRMAN. Is that the label of each package, each bottle?

Mr. REEVE. Each bottle; each unit package. Here is a label of Scott's Emulsion, cod-liver oil, dated in cipher. Here is a label of the Campbell Soup Company.

The CHAIRMAN. Tell us about that.

Mr. REEVE. It is dated in cipher.

The CHAIRMAN. Where do they operate?

Mr. REEVE. Camden, N. J.

The CHAIRMAN. Each package is labeled in cipher?

Mr. REEVE. Each can of their goods is labeled in cipher; each can of their goods has been labeled in cipher. They have, within the last two or three weeks, decided to date all of their labels commencing at some date in the near future, with open perforated dates that the public can read. Here is a wrapper of Ivory soap, put up by Proctor & Gamble, of Ivorydale, Ohio, dated in cipher. It is hardly a food product. Do you want it any more extensive than that, Senator?

The CHAIRMAN. Now, have you any meat products—canned-meat products, or otherwise—that are dated at all?

Mr. REEVE. Here is Morrell-Soule Company, Syracuse, N. Y.; they date their mince-meat.

The CHAIRMAN. In cipher?

Mr. REEVE. In cipher. The Natural Food Company, Niagara Falls, date their shredded-wheat biscuit in cipher; I mean the wrappers of their shredded-wheat biscuit.

The CHAIRMAN. Have you any tags which are used upon meat products that are dated?

Mr. REEVE. No; I have not.

The CHAIRMAN. What is the nature of those tags, or the character; of what are they made?

Mr. REEVE. Senator, I do not know of any dressed beef—I presume you refer to that class of dressed beef, or mutton—I do not know of any of that that is dated either in cipher or plain figures with tags.

The CHAIRMAN. How are they dated?

Mr. REEVE. I do not know that they are dated at all.

The CHAIRMAN. How about peas?

Mr. REEVE. Peas, tomatoes, corn, beans—that class of canned vegetables, are nearly all dated on the labels in cipher. I am speaking of such portion of those goods as is put up by the largest wholesale grocers of the country.

The CHAIRMAN. Do you know of any canned tongues or meat like canned mincemeat that are dated?

Mr. REEVE. I understand that such concerns as Read-Murdock—such concerns as that in Chicago—date their canned meats, tongues, chickens, etc. It is possible I may have a label here. These are only just samples of typical products. There are some ox tongue that seem to be dated in cipher.

The CHAIRMAN. Whose product is that?

Mr. REEVE: That is Franklin McVeagh & Co.

The CHAIRMAN. Is there any other of Franklin McVeagh & Co.'s goods dated?

Mr. REEVE. Their canned vegetables.

The CHAIRMAN. Are any of them dated openly—plain?

Mr. REEVE. None that I know of.

The CHAIRMAN. What class of goods do they have?

Mr. REEVE. A very great variety. Some is marked and some is not. I would like to explain this: That wholesale grocers use several various methods of marking. The most popular is to show on the label the month and the year that the goods are packed. In addition to that a lot number or a stock number would indicate the plant in which the goods were put up.

The CHAIRMAN. The date?

Mr. REEVE. Not the day of the month, but the month and the year.

The CHAIRMAN. Now, what range of goods would that refer to?

Mr. REEVE. That would refer to corn, tomatoes, peas, beans—beans of all various kinds—that class of common vegetables.

The CHAIRMAN. Are sardines dated in any instance that you know of?

Mr. REEVE. Not to my positive knowledge. A number of concerns use our method of marking that I think put up fish, but I can not tell you any particular one, whether they put up sardines or not.

The CHAIRMAN. Have you a list there of the firms that use your labels?

Mr. REEVE. I have a list that changes from time to time. This is an old list. [Indicating.] Many of the parties named on this list

use cipher code. Some use plain figures. This doesn't apply entirely to food products; it consists of brewers, ink manufacturers, etc.

The CHAIRMAN. Do you object to our printing the names of the people with whom you do business?

Mr. REEVE. That list is sent out with our circulars, and I can see no objection to it. The following is a list of some of the prominent concerns that date, number, or otherwise mark their labels, cartons, wrappers, etc., with perforating machines:

Name.	Address.	Name.	Address.
Armour & Co	Chicago, Ill.	Bartholomay Brewery Co.	Rochester, N. Y.
Franklin MacVeagh & Co.	Do.	Curtice Bros. Co	Do.
Reid, Murdoch & Co	Do.	Flower City Brewing Co.	Do.
Sprague, Warner & Co	Do.	Woodcock Macaroni Co	Do.
Morris & Co	Do.	J. Hungerford Smith Co.	Do.
Price Baking Powder Co.	Do.	E. P. Reed & Co	Do.
Wm. Henning Co	Do.	Clinton Canning Co	Rome, N. Y.
Fortune Bros. Brewing Co.	Do.	Merrell-Soule Co	Syracuse, N. Y.
Garden City Brewery	Do.	Walter M. Lowney Co	Boston, Mass.
Calumet Baking Powder Co.	Do.	Wm. A. Miller & Co	Do.
Steele-Wedeles Co	Do.	Moxie Nerve Food Co	Do.
Conrad Seipp Brewing Co.	Do.	Carter's Ink Co	Do.
Jacques Manufacturing Co.	Do.	James H. Prince Paint Co.	Do.
Libby, McNeil & Libby	Do.	New England Confectionery Co.	Do.
Berry-Maybrun Co	Do.	Stickney & Poor Spice Co.	Do.
Price Flavoring Extract Co.	Do.	Burkhardt Brewing Co	Do.
P. Schoenhofen Brewing Co.	Do.	H. A. Johnson Co	Do.
Northwestern Brewery Co.	Do.	The D. & L. Slade Co	Do.
Glaser, Kohn & Co	Do.	W. F. Schrafft & Sons Corp.	Do.
Bremner Bros	Do.	Lydia E. Pinkham Medicine Co.	Lynn, Mass.
Sheppard-Strassheim Co.	Do.	Harvard Brewing Co	Lowell, Mass.
Monarch Brewery	Do.	Lowney Chocolate Co	Mansfield, Mass.
Oelerich & Laux	Do.	Richards & Brennan Co	Randolph, Mass.
Atwood & Steele Co	Do.	Great Western Cereal Co.	Akron, Ohio.
Bradley & Vrooman Co	Do.	Van Camp Packing Co	Bryan, Ohio.
Heath & Milligan Manufacturing Co.	Do.	T. A. Snider Preserve Co.	Cincinnati, Ohio.
Chicago Varnish Co	Do.	Krippendorf-Dittmann Co.	Do.
The Standard Brewery	Do.	Geo. H. Streitman's Sons Co.	Do.
Sherer-Gillett Co	Do.	The J. Weller Co	Do.
Birk Bros. Brewing Co	Do.	Heekin Spice Co	Do.
Independent Brewing Association.	Do.	John Hauck Brewing Co.	Do.
Pratt & Lambert	Do.	R. F. Johnston Paint Co.	Do.
National Brewing Co	Do.	M. H. Alexander Co	Do.
Cutler Shoe Co	Do.	Chr. Moerlein Brewing Co.	Do.
Acker, Merrall & Condit Co.	New York City, N. Y.	The Haserot Co	Cleveland, Ohio.
Royal Baking Powder Co.	Do.	McCart Christy Co	Do.
The Wheatena Co	Do.	Clyde Produce Co	Clyde, Ohio.
J. W. Beardsley's Sons	Do.	Clyde Kraut Co	Do.
P. M. Ohmeis & Co	Do.	J. F. Humphreys & Co	Bloomington, Ill.
Scott & Bowne	Do.	Van Camp Packing Co	Effingham, Ill.
E. R. Durkee & Co	Do.	Bordens Condensed Milk Co.	Elgin, Ill.
The Hooven Mercantile Co.	Do.	Corn Products Refining Co.	Granite City, Ill.
Francis H. Leggett & Co	Do.	Kewanee Brewing Co	Kewanee, Ill.
Seeman Bros	Do.	Foulds Milling Co	Libertyville, Ill.
R. C. Williams & Co	Do.	T. A. Snider Preserve Co.	Mount Vernon, Ill.
Runkel Bros	Do.	Armour & Co	National Stock Yards, Ill.
Mutual Milk & Cream Co.	Do.	Jobst-Bethard Co	Peoria, Ill.
Bovinine Co	Do.	Gipp Brewing Co	Do.
Jacob Ruppert	Do.	Dick & Bros., Quincy Brewery Co.	Quincy, Ill.
Pabst Brewing Co	Do.	Wisconsin Condensed Milk Co.	Pecotonica, Ill.
Moxie Nerve Food Co	Do.	Warrensburg Canning Co.	Warrensburg, Ill.
F. O. Pierce Co	Brooklyn, N. Y.	Corn Products Refining Co.	Davenport, Iowa.
Nassau Brewing Co	Do.	Independent Baking Co	Do.
Dunston Lithographing Co.	Buffalo, N. Y.	Dubuque Brewing and Malting Co.	Dubuque, Iowa.
Larkin Company	Do.	Great Western Cereal Co.	Fort Dodge, Iowa.
Hiram Ricker & Sons	South Poland, Me.	Van Camp Packing Co	Perry, Iowa.
Narragansett Brewing Co.	Providence, R. I.	Sioux City Brewing Co	Sioux City, Iowa.
The Southern Manufacturing Co.	Richmond, Va.	Interstate Brewing Co	Do.
Beech-Nut Packing Co	Canajoharie, N. Y.	C. Shenkberg Co	Do.
Batavia Preserving Co	Middleport, N. Y.		
The Shredded Wheat Co.	Niagara Falls, N. Y.		

Name.	Address.
Johnson Biscuit Co	Sioux City, Iowa.
Waples-Platter Grocery Co.	Denison, Tex.
Armour & Co	Fort Worth, Tex.
Houston Ice and Brewing Co.	Houston, Tex.
Lone Star Brewing Co	San Antonio, Tex.
San Antonio Brewing Association.	Do.
Pacific-American Fisheries.	Bellingham, Wash.
Chas. H. Lilly Co	Seattle, Wash.
Schwabacher Bros. & Co	Do.
Seattle Brewing & Malting Co.	Do.
Chr. Heurich Brewing Co	Washington, D. C.
A. O. Bliss Medical Co	Do.
Kuner Pickle Co	Denver, Colo.
C. A. Lammers Bottling Co.	Do.
C. S. Morey Mercantile Co.	Do.
Hopkins & Co	Hartford, Conn.
Winchester Repeating Arms Co.	New Haven, Conn.
Goodwin Preserving Co	Louisville, Ky.
Chattanooga Brewing Co	Chattanooga, Tenn.
C. E. Coe	Memphis, Tenn.
Tennessee Brewing Co	Do.
Sioux Falls Brewing and Malting Co.	Sioux Falls, S. Dak.
Jos. Campbell Co	Camden, N. J.
Lembeck & Betz Eagle Brewing Co.	Jersey City, N. J.
Christian Feigenspan	Newark, N. J.
Newark Varnish Works	Do.
Evansville Brewing Association.	Evansville, Ind.
F. W. Cook Brewing Co	Do.
C. L. Centlivre Brewing Co.	Fort Wayne, Ind.
Kothe, Wells & Bauer Co.	Indianapolis, Ind.
Piel Bros. Starch Co	Do.
Indianapolis Brewing Co	Do.
C. F. Schmidt Brewery	Do.
Thieme & Wagner Brewing Co.	Lafayette, Ind.
T. A. Snider Preserve Co	Marion, Ind.
Loudon Packing Co	Terre Haute, Ind.
Great Western Cereal Co	Nebraska City, Nebr.
Storz Brewing Co	Omaha, Nebr.
Fred Krug Brewing Co	Do.
Metz Bros. Brewing Co	Do.
McCord-Brady Co	Do.
Paxton & Gallagher Co	Do.
Jetter Brewing Co	South Omaha, Nebr.
Armour & Co	Do.
Guggenhime & Co	Fresno, Cal.
J. B. Inderrieden Co	Do.
Pacific Coast Seeded Raisin Co.	Do.
Hunt Bros. Co	Haywards, Cal.
Pioneer Green Chili Packing Co.	Los Angeles, Cal.
Maier Brewing Co	Do.
Haas, Baruch Co	Do.
Bishop & Co	Do.
A. Schilling & Co	San Francisco, Cal.
A. O. Bliss Medical Co	Do.
San Francisco Breweries	Do.
California Ink Co	Do.
D. Ghirardelli Co	Do.
Barataria Canning Co	Biloxi, Miss.
Pass Packing Co	Pass Christian, Miss.
New Orleans Coffee Co	New Orleans, La.
Barataria Canning Co	Do.
Van Camp Packing Co	St. Albans, Vt.
Gambrinus Brewing Co	Portland, Oreg.
Topeka Milling Co	Topeka, Kans.
Armour Packing Co	Kansas City, Kans.
Horlicks Malted Milk Co	Racine, Wis.
Konrad Schreier Co	Sheboygan, Wis.
Van Camp Packing Co	Watertown, Wis.
Milwaukee-Waukesha Brewing Co.	Waukesha, Wis.
Morris & Co	Kansas City, Mo.
A. O. Bliss Medical Co	Do.
Ridenour-Baker Grocery Co.	Do.
Anheuser-Busch Brewing Association.	St. Louis, Mo.
St. Louis Syrup and Preserving Co.	Do.
F. B. Chamberlain Co	Do.
American Brewery	Do.
Scudder-Gale Grocery Co	Do.
St. Louis Brewing Association.	Do.
American Bakery Co	Do.
Stein wander-Stoffregen Coffee Co.	Do.
Sanitas Nut Food Co	Battle Creek, Mich.
The Williams Bros. Co	Detroit, Mich.
Goebel Brewing Co	Do.
Calvert Lithographing Co.	Do.
Detroit White Lead Works.	Do.
Kopplitz-Melchers Brewing Co.	Do.
Independent Brewing Co	Do.
Stroh Brewery Co	Do.
Voight Brewery Co	Do.
The Pingree Co	Do.
Eye Fix Remedy Co	Do.
Fremont Canning Co	Fremont, Mich.
Grand Rapids Brewing Co.	Grand Rapids, Mich.
Park Brewing Co	Hancock, Mich.
Menominee River Brewing Co.	Menominee, Mich.
Muskegon Brewing Co	Muskegon, Mich.
U. S. Horseradish Co	Saginaw, Mich.
Duluth Brewing and Malting Co.	Duluth, Minn.
Gowan-Peyton-Twohy Co.	Do.
International Stock Food Co.	Minneapolis, Minn.
Glueck Brewing Co	Do.
Minneapolis Brewing Co	Do.
Jac. Schmidt Brewing Co	St. Paul, Minn.
Theo. Hamm Brewing Co.	Do.
Griggs, Cooper & Co	Do.
St. Paul White Lead and Oil Co.	Do.
The Peruna Co	Columbus, Ohio.
Dayton Breweries Co	Dayton, Ohio.
Irvin, Jewell & Vinson Co.	Do.
Jersey Packing Co	Hamilton, Ohio.
Procter & Gamble Co	Ivorydale, Ohio.
Leroux Cider and Vinegar Co.	Toledo, Ohio.
Warren Paint Co	Warren, Ohio.
Van Camp Packing Co	Wauseon, Ohio.
H. F. Hemingway & Co	Baltimore, Md.
Emerson Drug Co	Do.
The Martin Wagner Co	Do.
American Label Manufacturing Co.	Do.
Gibbs Preserving Co	Do.
Gottlieb-Bauernschmidt-Strauss Brewing Co.	Do.
Lutz & Schramm Co	Allegheny Pa.
A. Colburn Co	Philadelphia, Pa.
Philadelphia Pickling Co	Do.
H. O. Wilbur & Sons	Do.
Proto Brewing Co	Do.
Geo. D. Wetherill & Co	Do.
Arnholt & Schaeffer Brewing Co.	Do.
The Acme Tea Co	Do.
Atmore & Son	Do.
H. J. Heinz Co	Pittsburg, Pa.
Duquesne Brewery	Do.
Iron City Brewery	Do.
Wisconsin Condensed Milk Co.	Burlington, Wis.

Name.	Address.	Name.	Address.
John Gund Brewing Co...	La Crosse, Wis.	Canadian Canners (Limited).	Hamilton, Canada.
G. Heileman Brewing Co..	Do.	A. & R. Loggie.....	Loggieville, Canada.
C. & J. Michel Brewing Co.	Do.	Vancouver Breweries.....	Vancouver, Canada.
Cream City Brewing Co....	Milwaukee, Wis.	E. W. Gillett Co. (Limited).	Toronto, Canada.
Edgewood Farm.....	Do.	Edmonton Brewing and Malting Co. (Limited).	Edmonton, Canada.
A. Gettelman Brewing Co.	Do.	Cerveceria Guauhtemoc...	Monterey, Mexico.
Jung Brewing Co.....	Do.	Cerveceria do Chihuahua, South America.	Chihuhua, Mexico.
Milwaukee Brewery Co...		Midland Bros. (Limited)..	Burton-on-Trent, England.
John Hoffmann & Sons Co.	Do.	Trufood (Limited).....	Cheshire England.
Independent Milwaukee Brewing Co.	Do.	C. J. VanHouten & Zoon..	Weesp, Holland.
Joseph Schlitz Brewing Co.	Do.	Francesco Cinzano.....	Turin, Italy.
Valentine Blatz Brewing Co.	Do.		
Fred Miller Brewing Co...	Do.		
Pabst Brewing Co.....	Do.		
Calgary Brewing and Malting Co.	Calgary, Canada.		

The CHAIRMAN. Now, will you state the character of labels, or the scope of labels used on different products, as to the material they are made of, as to whether they are easily applied and durable?

Mr. REEVE. Most of the labels that are marked by our method are paper labels.

The CHAIRMAN. Well, have you others than paper?

Mr. REEVE. We have tags made from what is known as insoluble vellum. They are used by dyehouses, textile manufacturers, cleaning establishments.

The CHAIRMAN. Could they be used in tagging meats, salt or fresh?

Mr. REEVE. There would be no objection to using them as I could see.

The CHAIRMAN. I mean from a physical standpoint?

Mr. REEVE. No, they are perfectly injurious—I mean not injurious—and they are not affected by moisture. In dyehouses they are attached to the goods and pass through the various chemical processes of boiling and steaming and acids.

The CHAIRMAN. Would they be indestructible in salt water or in curing processes?

Mr. REEVE. I think so. I have samples of them.

The CHAIRMAN. Have you a sample of them?

Mr. REEVE. Yes, I have samples here [indicating].

The CHAIRMAN. Let us see the samples.

Mr. REEVE. The advantage of marking these tags by perforations is this: That in dyed goods, if they mark them in ink, and dye the tag, the mark is obliterated by the dyestuff, but marking it in that way and dyed, they of course can not dye the holes.

The CHAIRMAN. Well could that be applied to meat in pickle, etc., without the label becoming obscured or destroyed?

Mr. REEVE. I think it could.

The CHAIRMAN. Would you mind offering those in evidence as one of the methods?

Mr. REEVE. Certainly not.

[The exhibit was marked in evidence.]

The CHAIRMAN. Have you a system of labeling that could be applied to meats under any conditions?

Mr. REEVE. I have never perfected any such method; not knowing much about the meat business I couldn't tell you whether the method would be practicable or not, but I should think so.

The CHAIRMAN. Give us some other information if you have it in regard to the adaptability of your process and the scope of it.

Mr. REEVE. The cost of marking the label on each unit package of goods in cases where the number of unit packages are so large as to make it expensive, made it impossible to mark each unit package with a rubber stamp at one time except at considerable expense. By perforating labels a number of labels can be marked at one time at an expense that is scarcely worth considering.

The CHAIRMAN. Well, give us an idea at what expense those labels can be furnished.

Mr. REEVE. Labels on canned goods can be marked at an expense not to exceed 1 cent per thousand.

Senator OLIVER. Does that include the cost of the label?

Mr. REEVE. Oh, no; just the marking. I am speaking of the marking, that is all.

Senator OLIVER. You were speaking of where it is on the ordinary label—where the label would have to be supplied at any rate?

Mr. REEVE. Just the cost of marking the label.

Senator OLIVER. Just the cost of marking the label?

Mr. REEVE. Yes, sir; the price I mentioned of 1 cent per thousand, of course, applies to plants where hundreds of thousands of labels are being used during the busy season per day.

The CHAIRMAN. Well, what is the cost of the plan or process?

Mr. REEVE. The machine that does this?

The CHAIRMAN. Yes; give us the lowest.

Mr. REEVE. A machine to do the work costs from $26 up to $500.

The CHAIRMAN. Well, those that cost $26, how many labels would they perforate in a day?

Mr. REEVE. With such a machine you could easily perforate from one to two hundred labels in one minute.

The CHAIRMAN. Now, is that by hand?

Mr. REEVE. By hand.

The CHAIRMAN. With one person?

Mr. REEVE. One person.

The CHAIRMAN. That could be done by a boy, could it?

Mr. REEVE. Yes, sir.

The CHAIRMAN. And your larger machines—what would they do; medium machines?

Mr. REEVE. A machine operated by treadle—foot power—should perforate from 300 to 500 labels in one minute. A motor operating machine should perforate from 600 to 800 labels in one minute.

The CHAIRMAN. On any material?

Mr. REEVE. No; on paper of any thin, flexible material.

The CHAIRMAN. Is that true of the label that you have here, the indelible label, or indestructible label?

Mr. REEVE. I should say on the insoluble label that about one-half of the above number would be a fair estimate.

The CHAIRMAN. Have you any list of concerns that use the open date?

Mr. REEVE. At the office, not here.

The CHAIRMAN. At the office?

Mr. REEVE. Yes, sir.

The CHAIRMAN. Is there any considerable number of packers who are manufacturers of these products that use open dating?

Mr. REEVE. Very few food products manufacturers; there are quite a number of brewers that use open dates on their filling.

The CHAIRMAN. You make the machinery to order, open or cipher label, I suppose.

Mr. REEVE. Either way.

Senator OLIVER. These paper labels, do they use them on bottles?

Mr. REEVE. Yes.

The CHAIRMAN. Are they used on medicines, too?

Mr. REEVE. Some medicine; Lydia Pinkham Compound, the labels are perforated in cipher.

The CHAIRMAN. Do you know of any butter establishments that use labels in cipher or open?

Mr. REEVE. I do not know of any.

The CHAIRMAN. Do you know of any poultry establishments that use labels in cipher or open?

Mr. REEVE. I do not know of any.

The CHAIRMAN. I suppose you have no special knowledge as to whether or not labels could be made, adapted to marking of fowl, game, etc.?

Mr. REEVE. We have given that subject some attention. I have seen a tag that I think is made by the Dennison Manufacturing Company that has a wire snapple, like the snapple with which you hitch a horse to a post, with a sharp point that could be hooked through cloth or soft material.

The CHAIRMAN. That could be used for meat?

Mr. REEVE. Yes, sir.

The CHAIRMAN. Could be attached to dressed beef or fowl?

Mr. REEVE. That was our idea; if the tag were perforated with a date or other mark indicating information, I can not see why the frost or moisture, or effect that the processes of handling the meat might have upon it, would obliterate the mark.

The CHAIRMAN. That could be attached to each individual piece of meat, could it not?

Mr. REEVE. It could be attached, I should think.

The CHAIRMAN. Now, is there any further information?

Mr. REEVE. You might file this, if you wish. [Indicating.] I might mention this: I understand that you have some testimony about marking raisins. Here is a wrapper perforated with a date by one of our machines that is used by the Guggenheim Company at Fresno, Cal., for marking their seeded raisins that are packed in cartons, after they are wrapped with this paper, for instance. [Indicating.]

The CHAIRMAN. The wrapper of the box is perforated?

Mr. REEVE. No, the wrapper around the raisins, the soft, seeded raisins. They are put in bricks and pressed together, and the wrapper put around, and they are perforated with the date like that [indicating.]

[The exhibit was marked in evidence.]

I would like to say this, Senator, that very frequently we supply a machine to perforate plain figures. They are sometimes used as a cipher. We have no means of knowing whether the mark on their

goods is as it reads, or is as it would read according to some cipher that they have adopted from the figures that the machine makes.

The CHAIRMAN. Can you give us any further information as to the use of labeling process?

Mr. REEVE. As to the cost of doing the work?

The CHAIRMAN. Both.

Mr. REEVE. I think the information I have given on the cost fully covers the ground except there should be added to such cost the interest on the cost of the machine that does the work, which would be from one to ten dollars a year, according to the price of the machine purchased. As to the rapidity with which the work can be done, I would state that a treadle-operated machine costing $150—I have known many operators to perforate 30,000 labels per hour, and I have known one operator in a brewery in Pittsburg to double that speed. That covers cost and speed.

Now, the advantage of a perforated mark is that it is always uniform; it is indelible; it is unalterable and legible.

The CHAIRMAN. About the Campbell soup, you say they are entering upon a new plan of putting plain labels as to the date of the can?

Mr. REEVE. Whether they have made that public or not I do not know, but we were advised by them within the last month, and we have recently supplied them with two machines to perforate plain dates on their soup labels instead of cipher dates.

The CHAIRMAN. That covers the information that you desire to give?

Mr. REEVE. Everything that I think of, Senator, unless you have something more.

STATEMENT OF W. A. EVANS, HEALTH COMMISSIONER, CHICAGO, ILL.

The CHAIRMAN. Give the stenographer your name and occupation and residence.

Mr. EVANS. W. A. Evans, health commissioner, Chicago, Ill.

The CHAIRMAN. Have you made investigation of the question of cold-storage meats?

Mr. EVANS. Not specially. My duties, as commissioner of health of the city of Chicago bring me somewhat in contact with cold storage, although my experience would best qualify me to speak from the standpoint of the effect of foods on health rather than the technical points relating to cold storage itself.

The CHAIRMAN. You have, of course, I suppose, no individual knowledge as to quantities in cold storage?

Mr. EVANS. I have not.

The CHAIRMAN. Then, just make your statement in regard to the effect of storage on health.

Mr. EVANS. Well, I am a little at a loss to know how to proceed, gentlemen.

The CHAIRMAN. Well, take chickens for instance. I suppose you have investigated them as to the effect of storage on the healthfulness of the chickens?

Mr. EVANS. In a somewhat general way. I would say that I came down here on other business, and did not have this specifically in mind in coming here, and in consequence I haven't anything arranged in

my mind in a systematic way. Probably I just better proceed to talk, and then if it develops that I am not talking on things that you are interested in, if you will let me know, I will try to bring it around to the things that you have in mind, if on those things I can give you any information that would seem to me to be of any value.

I want to say in starting, that from the standpoint of health, that I do not believe that the question of food is of major consequence in adults. I believe it to be of overshadowing importance in the question in children. We have 6,300 babies die each year in Chicago, babies under 1 year of age, and I believe it to be a conservative estimate that 2,000 of them die as the result of bad food. That, of course, applies to milk, since milk is practically the sole food of those children. On this I base the opinion that there is nothing that is quite so important as the food that babies are to get. On the other hand, when we come to adults and judge the results by the death rate, we have practically no adult mortality from bad food or from diseases that are due to bad food. There is a considerable adult mortality that follows the eating, but that comes from eating too much rather than too little. Practically nobody in America suffers from not eating enough food. Practically everybody in America suffers from getting too much food. There is another way to look at it, however, that throws additional light on it, perhaps a more accurate light than the conclusions drawn from the death rate, and that is the diseases that are produced by foods that are not right; such diseases do not go to terminate the life of the individual. For instance, if a man eats a piece of bad meat and is materially poisoned thereby, he will have a cholera morbus, from which he will recover within forty-eight hours, and in a city where they keep no track of diseases of that type, except through the deaths that they cause, that man's case would not enter into the records at all. So that aside from the harm which shows in death certificates, there may be and there is harm which shows in the sickness rate through diseases that are not registered, that are not registerable diseases in the ordinary American community. On the first group I have information. As to the second group, my information is not much more than impressions, and in consequence is not entitled to special weight.

I believe that so far as the cold-storage proposition is concerned, that it is a question of commerce and economy rather than a question of health. I do not believe that the food that is in cold storage, and that is put in cold storage in good condition, when it is taken out of cold storage is unwholesome except in rare instances, and therefore I believe that the proposition is largely a proposition of economy rather than a proposition of health.

The CHAIRMAN. I would like to ask you about ptomaine poisoning. Have you given attention to the causes of ptomaine poisoning as applied to any particular classes of food?

Mr. EVANS. I should say yes.

The CHAIRMAN. Well, give us your observations.

Mr. EVANS. You mean as to particular articles—whether they are——

The CHAIRMAN. Class of articles, first.

Mr. EVANS. Well, I think that we find more cases of ptomaine poisoning the result of bad milk than anything else. I am now using the term "ptomaine" in the generic sense.

The CHAIRMAN. In the broad sense?

Mr. EVANS. In the broad sense. That we have more cases of ptomaine poisoning from milk and milk products, particularly ice cream.

The CHAIRMAN. Butter?

Mr. EVANS. Seldom from butter, I should say. All the harm that is done by butter is done by the result of fatty acids that develop in the butter.

The CHAIRMAN. Do they develop through the length of time that they are kept after production, or are they in the article at the time of its production?

Mr. EVANS. That is a question that is somewhat difficult to answer. Of course, as it is produced—now, coming back to the case of milk, as the milk comes from the cow, the milk is, of course, always free—or practically, I should say—always free from products of this character. They develop in the milk after it has come from the cow. There are several elements that enter into it; the element of time, the element concerning which you have just asked is probably the largest determining factor. I should say that in any milk proposition that, as the lawyer would say, time is the essence of the contract.

The CHAIRMAN. You include butter in that?

Mr. EVANS. Butter—yes, sir, I should say; although the life of milk is very much less than the life of butter.

The CHAIRMAN. Does that progress; that adulterous condition—that time of the keeping of butter?

Mr. EVANS. So far as the rancidity is concerned, and as to butter I suggested a moment ago that it developed fatty acids, and the amount of fatty acids increased with the passage of time.

The CHAIRMAN. And that is a deleterious condition?

Mr. EVANS. In butter, yes.

The CHAIRMAN. Now, does that depend upon the conditions under which the butter is kept?

Mr. EVANS. It depends principally upon the conditions under which the butter is made. The circumstances of conditions—as the milk is souring and as the butter is to be made from sour cream, the bacteria are falling in from time to time, and they are multiplying with the passage of time, and then comes the act of churning. The act of churning is an act that is usually accompanied by the falling in of still more bacteria. Now, then, you get your butter from this milk and salt it. It was thought for a while that the salt would kill the bacteria in the butter. It has been demonstrated that it does not do so. Butter is sold as fresh or it is sold as cold-storage butter. If it is kept in cold storage it is kept at about 5 to 10 degrees below zero. At that temperature there is no development of bacteria.

With regard to ice, we know that there is a diminution in the number of bacteria, beginning at the end of about the third day, and becoming gradually manifest about the end of the third month; and ice becomes sterile at about the end of twelve months, even though the water from which it was made was inspected water.

Our observations as to the bacterial count of butter that has been kept for some time would indicate that butter still retains a high bacterial count at the end of several months; let us say, seven or eight months. We sent over and got some butter from the storage

warehouses, butter which had been frozen for several months, with a view of determining what was the number of bacteria in that butter. We found that it averaged about ten to twelve million bacteria to the 15 grains of butter, or to the gram. This, in all probability, was a lesser bacterial count than was to be found in the cream from which the butter was made. After milk has stood long enough to sour, and nearly all butter is made from soured cream, and then the cream has risen, carrying to the top of the milk the most of the bacteria of the milk, the probability is that each 15 drops of milk, which corresponds to a gram of butter, or each 15 drops of cream, would have more than that number of bacteria.

The CHAIRMAN. What is the relation of the number of bacteria to the healthfulness of the butter?

Mr. EVANS. I should say that roughly the larger number of bacteria in butter the more likely the butter would be to contain unwholesome products, as that would have to be taken with a grain of allowance. The bacteria there are bacteria of many different kinds. Some of those bacteria would be harmful, some of them would be harmless; some of them would be these producing bacteria, and some of them would be bacteria which would not be disease producing, but which would develop deleterious product in the butter.

The CHAIRMAN. Let me ask you, when butter has been in cold storage at a point below zero that you have indicated, and is taken out for the market, would it deteriorate in healthfulness by reason of being subjected to normal conditions or usual conditions of temperature?

Mr. EVANS. The point that you are now making is that if cold-storage butter was removed from cold storage and kept in ordinary conditions, would it deteriorate there?

The CHAIRMAN. Yes, sir.

Mr. EVANS. Yes; of course.

The CHAIRMAN. Would it deteriorate more rapidly because of having the age of cold storage added to it?

Mr. EVANS. I doubt it. I am of the opinion that some things that have been frozen go to pieces more rapidly for having been frozen, but I do not believe that that would hold true with butter. The things that have been frozen have their fibrous tissue broken by the act of freezing—water forces in between the tissues, and they break down somewhat more rapidly than things that have not been frozen. I think that that is not only a matter of scientific observation, but it is a matter of common knowledge.

In the case of butter, however, I do not believe that would wholly be true. It is a straight proposition of the bacterial contents of the butter; that is, of the bacteria that had remained alive in that butter——

The CHAIRMAN. Now, have you made any investigation as to poultry?

Mr. EVANS. Not specially. I have had observances that have come to me in the discharge of my duty as to poultry and my reading on the subject. I try to keep track of it.

The CHAIRMAN. Does it deteriorate after it has been in cold storage and is then exposed to ordinary air conditions more rapidly because of having been kept in cold storage undrawn?

Mr. EVANS. I should say that that is a somewhat complicated question that would have to be answered in its several parts. It would depend very much upon how the material—to wit, the poultry—had been prepared before it had been put into cold storage. And then what it had gone through in cold storage. It is largely, of course, a question of how the fowl is handled after it is taken out of cold storage. Any fowl that is kept in a warm temperature will decompose. Now, at the temperature at which fowls are stored the development of bacteria in them will not be great. There will be an inconsiderable development of some kind of bacteria and there will be a decrease in the number of certain other kinds of bacteria. There are certain complications that are in the fowl that will continue to operate even at the low temperatures of cold storage, so that the fowl, after it comes out of cold storage, is not as firm a fowl as a fowl that hadn't been in cold storage at all.

Now, there are certain methods of preparation. For instance, if the fowl has been water picked, been soused into the water so as to make the feathers come off more easily, that seems to decrease the resistant power of the skin, so that germs get through the skin more rapidly than if the fowl had been dry picked.

The CHAIRMAN. In cold storage?

Mr. EVANS. Yes; either in cold storage, or not in cold storage. With fowls that do not go into cold storage those things are not of the same consequence, because they are usually eaten up before they have had time to develop these bacterial forms.

The CHAIRMAN. Have you observed the condition of fowls that had been in cold storage and then removed from cold storage and placed again in cold storage when they came on the market?

Mr. EVANS. I have an opinion on that subject that is largely gathered from reading, that is not the result of personal observations on my part.

The CHAIRMAN. Give us your impression.

Mr. EVANS. The impression I have is that this stuff that goes into cold storage, if taken out, should not be allowed to go back into cold storage again.

The CHAIRMAN. They are not in a good condition to go into cold storage?

Mr. EVANS. No. It seems to me the important part of this investigation, if you will permit the digression on this point, is the method of determining that the stuff that goes into cold storage is proper stuff, and that is much the most important part of this question as I see it, and that would apply to just the point that you have raised; that is, the taking out of stuff and thawing it out, and offering it for sale, and then upon failing to sell it, send it back into cold storage. There should be some way of preventing that from occuring. I think that is of some consequence with fowl; I think it is of more consequence with fish.

The CHAIRMAN. And with beef?

Mr. EVANS. I don't think it means very much with beef. I do not think it has very much bearing on the beef proposition. I know that fish will be taken out, say toward the latter part of the week, the quantity that they think will be consumed on Friday. Then if for any reason they do not sell all of that, they freeze it up and put

it back in cold storage, and offer it at some later time. I think that there is a difference in the method that should prevail between the firmer meats and the softer meats; that is, what is permissible and what is often desirable, that the firm meats, like beef and like mutton and hog is more desirable than the soft meats of which fish is the softest, and I think again there is a difference as to whether the meat is to be put up clean or uncleaned; that, if you are dealing with, say beef, where the entrails have been removed and the meat has been washed down so that there are none of the feces, or anything that has been in contact with feces, left in your meat, you could have one method of procedure. If, on the other hand, you put up your meat with the entrails in—and fish is usually put up with the entrails in; occassionally they are put up with the entrails and with the blood in—that you have another proposition to deal with. So I think it is more important with fish than with other things. Especially with fish, in some measure with fowls, it is necessary, in my opinion, that there should be an inspection which would prevent the article which has been taken out of storage from being frozen up again. That is, of course, a part of the general proposition that nothing should be allowed to go into cold storage that isn't fit to be frozen.

The CHAIRMAN. Now, I would like to ask you in that connection of fowls—it is in the record that fowls slime when they are taken out of cold storage very quickly—that a slime is generated that flows from them, or appears on the surface. Now, is that an unhealthful condition?

Mr. EVANS. I should say that that is not an unhealthful or a harmful condition, although it does take from the desirability of the fowl. The frozen temperature forces out the solid from the liquids, it tends to separate them in some measure, and now, when that which is not liquid, namely, the blood serum and tissue juices, has been frozen and converted into a solid substance, and then that falls out, that stuff finds its way to the surface more readily than it naturally does—what you refer to as "slime."

The CHAIRMAN. I refer to the condition of a fowl being opened and the entrails removed—it slimes within a few hours on the inside.

Mr. EVANS. I should say that that would depend upon the degree, but the act of sliming itself would have no bearing upon the wholesomeness of it. Such a fowl wouldn't taste as well and wouldn't be as desirable from that standpoint as a fresh fowl.

The CHAIRMAN. Have you an opinion as to the length of time that fowl can be kept in cold storage without deteriorating?

Mr. EVANS. By deteriorating you mean deteriorating from taste standpoint?

The CHAIRMAN. Both taste and healthfulness.

Mr. EVANS. Well, those two questions have to be kept separate. I should say that there is no cold-storage fowl of any age that is quite as good to the taste as a fresh fowl. That under no circumstances does a cold-storage fowl taste quite up to the grade of a high-grade fresh fowl. That if the fowl is put up right that it will keep for two years, I should say, easily, without material change in its taste. It would still taste fairly well, although it would not anywhere near be up to the grade as to taste. If the fowl was put up right it would probably keep for a year and taste in a way that

would be satisfactory to 80 per cent of the people. Both vary very much, of course, in their taste. One man is not satisfied with anything except stuff that tastes like it came from the country, and the other fellow would not be so discriminating in his taste.

The CHAIRMAN. Do the viscera of the fowl keep as well in cold storage as the fresh?

Mr. EVANS. I should say that the viscera do not keep as well as the fresh, either in cold storage or out of cold storage.

The CHAIRMAN. That would include the livers of the fowl?

Mr. EVANS. That would include all the organs. There are two reasons for this. In the first place, those organs are closest to the contents of the intestinal canal, and in consequence the bacteria can wander to them more promptly than they can wander elsewhere. Now, in the second place, they are softer and the bacteria can get into them more readily. The muscle of the fowl, which is the part which is usually eaten, is somewhat farther away from the focus of harmful substances, and it is somewhat more resistant to it as well.

I didn't finish my answer a while ago about the cold storage fowl. So far as the wholesomeness of it is concerned, I believe that, presuming that the fowl was put up right, that it would be wholesome still at the end of a couple of years. It would certainly be wholesome at the end of a year.

The CHAIRMAN. How about sweetbreads; are they subject to more rapid deterioration in healthfulness?

Mr. EVANS. By sweetbreads we mean usually two things. There are the sweetbreads of the neck which is the thyroid gland, and the sweetbreads of the belly which is the pancreas. Now, the sweetbread in the neck is further removed and in consequence would stand up better than the sweetbread in the belly or the pancreas.

The CHAIRMAN. Now, I think, unless you have some suggestion to make, that that covers all we want.

Mr. EVANS. Well, I think I would offer this suggestion: That it seems to me that the very vital thing is to provide a method for inspection into the cold storage plants.

The CHAIRMAN. And out of it?

Mr. EVANS. And out of it.

The CHAIRMAN. If it is removed from one cold-storage plant to another several times then there should be an inspection of it on each occasion?

Mr. EVANS. Yes; and there should be an inspector at the plant who would have charge of everything that goes in and out; everything that goes out as well as everything that goes in.

The CHAIRMAN. Is it true that much of the deterioration in cold-storage products—that is, beef—is due in a measure to the time elapsing between the killing; that is, the time of slaughtering the article; between the killing and the freezing in cold storage?

Mr. EVANS. I should say that in my judgment that 90 per cent of the harm comes from the things that happen before it is frozen. But I would like to make it a good deal broader than meat. I would say that it applied with more force to fish and to fowl, to eggs and to butter, than it does with the more solid meats.

The CHAIRMAN. And that would be true of the interval between taking out of cold storage and placing in cold storage again?

Mr. EVANS. Decidedly, yes; that would be a part of a subanswer to my main answer, namely, that the thing to concentrate on is the condition of the stuff as it goes into storage, remembering the very great importance of that to which you have just alluded, namely, what happens to stuff that is taken out and thawed, and frozen up again.

The CHAIRMAN. There is a strong taste attached to such things as spare ribs and sweetbreads, and in fact with any meats that have been in cold storage. What is the cause of that strong taste? I suppose everybody has noticed it. For instance, you order a cut of roast beef, and in almost all cases, if it is cold-storage beef, they shave off the outer fat because it is rancid. Now, what makes it rancid?

Mr. EVANS. The only answer I could give to that would be a general answer, namely, that it is due to the development of fatty acids, and they are due to the presence of bacteria that causes fatty fermentation.

The CHAIRMAN. Is that harmful?

Mr. EVANS Yes; the fatty acids or substances that are trying on the digestion and are difficult to digest, and are difficult to assimilate.

The CHAIRMAN. They affect the health of the person eating it?

Mr. EVANS. Yes, sir; it is like eating rancid butter; the principle is just the same.

The CHAIRMAN. Well, if that is all, I think we can excuse you now, Doctor. Thank you.

Senator Heyburn presented the following data:

APRIL 30, 1910.

Hon. W. B. HEYBURN,
United States Senate.

DEAR SENATOR: In conformity with your request I submit herewith the report of Dr. M. E. Pennington respecting the condition of articles entering cold storage, particularly of poultry and eggs, the time such articles are kept in cold storage, and the reformation in methods of cold storage which have already been effected. Doctor Pennington, as you will see, can not give very extensive information respecting the quantities of articles in cold storage, but indicates sources from which such information may be obtained.

I call particular attention to that part of the report which discusses the misrepresentations which are made to the consuming public in regard to cold-storage products. I submit this as supplemental to the evidence which I have already given before your committee.

Respectfully, H. W. WILEY, *Chief.*

Dr. H. W. WILEY,
Bureau of Chemistry,
Washington, D. C.

DEAR SIR: I have your letter of April 25, asking for certain information on cold storage for hearings which Senator Heyburn is holding on the Lodge cold-storage bill. You ask these questions serially, and I will answer them serially to the best of my ability.

1. The condition of articles going into storage depends very largely upon the period of the year in which they are stored and the portion of the country from which they come. For instance, eggs going into storage in the early part of the egg season generally go in very good condition. Therefore, March, April, and May eggs are the best keepers that we have. The eggs which go in later than May are likely to be of lower quality because of the warmer weather conditions. Hence, their keeping time is shortened, and these are the eggs that are taken out first in the autumn, when the season of shortage begins.

These statements will hold for the eggs of our Middle West and our Central and Northern States. Texas, Oklahoma, Tennessee, and Kentucky eggs, of course, deteriorate much sooner, since weather conditions there are unfavorable a number of weeks before the northern climate makes storage inadvisable.

The more progressive egg handlers have realized that to pay storage on eggs of low-keeping quality is a bad business proposition. Hence, they are grading very carefully the eggs which go into storage and put in a uniformly good lot. On the other hand, those who are careless in business methods, or ignorant, do not realize that an egg which has begun to deteriorate before entering storage will continue to do so ever at a temperature of 32° F. And they are putting eggs into storage which commonly result in a business loss to them and a lowering of the general grade of storage eggs on the market.

I am glad to say that there has been great improvement in the quality of eggs stored, due to the enlightenment of the egg trade, and I believe that with the work that this bureau is doing on the study of the effect of handling eggs on their ultimate keeping quality and food value, the improvement in the future will be more rapid and more marked.

The best of our poultry is stored in the autumn, when the weather is favorable and when the fowls are in good condition. The poultry which comes directly from the large packer to the storage house, and which is packed with storage in view, is apt to enter the warehouse in good condition. Poultry which is shipped with ice, in barrels or boxes, from the packing house to the warehousing center and there boxed for storage may enter in good condition and may be below par. The poultry which the commission man or the retailer sends from his stock to the warehouse freezers because there is a glut on the market, or because the price does not suit him, or because he has rather more stock than he can handle, is apt to be in bad condition. Indeed, I believe that a large proportion of the undesirable cold-stored poultry which gets into our markets is poultry of this type.

Both the poultry industry and the egg industry are highly specialized forms of business, requiring a definite and accurate knowledge of many subjects. Heretofore the industry has had only its own experience, which, like the experience acquired by most business people, was apt to be more by rule of thumb than accurate experiment, and which was passed from father to son or partner to partner. The work which this bureau is doing in the scientific and careful study of every phase of the handling of poultry and eggs will ultimately put the industry on a scientific basis, and will make for a greatly bettered market for the consumer and a much more certain trade for the producer.

Of other articles which go into cold storage I can speak only from cursory observation. It is my opinion that fish stored in warehouses near their catching place are apt to go into the freezers in fresh condition. Meat is not stored in public warehouses to the extent that one would ordinarily imagine, yet most of it is in good condition so far as decomposition and putridity is concerned. Goods which are carried for comparatively short time in the chill rooms, such as celery, lettuce, asparagus, California rhubarb, etc., must go in in good condition or they will quickly deteriorate beyond the selling point. The storage of fruit such as apples, pears, etc., has been rendered a scientifically accurate process by the studies which have been made by the United States Department of Agriculture, and, while the storage of these products used to be discussed as we are now discussing the proper storage of poultry and eggs, the application of the scientific work done has removed the question of fruit storage from the field of contention.

2. The great bulk of the poultry stored is sold in from nine to twelve months after storage; that is, before the next producing season. Ordinary grades of fowl are probably on the market between the sixth and ninth month of storage. Special seasonal products, such as the small broiler or the soft-meated roaster will probably be kept until these birds can be produced again, which means a twelve months' time or close to it.

It is the object of every egg storer to unload his storage holdings just as promptly as possible when the egg shortage begins. If he can get his stock off in eight months he is pretty sure to do it. A nine months' holding is apt to be a risky proposition; and anything beyond that is almost certain to be a loss.

I do not think that meat is ordinarily kept more than one year, except in large meat centers, such as Chicago or Kansas City, where I am told it is sometimes held over twelve months. My own observations in the East would lead me to believe that most of our meat is out of the warehouses between six and nine months.

Seasonal fish are kept until the next season of production—very seldom longer. For good keeping, a fish must be glazed; that is, dipped into water so that it may be covered with a thin coating of ice every three months during its storage time. This is an expensive process because it means cost of handling and it is to the owner's advantage to get his fish out rather than have the expense of reglazing in order to hold.

8. I can not even guess at the quantity of stuffs held in cold storage. Thirty of our best and largest warehouses have agreed to send reports to the Warehousemen's Association each month of their holdings of butter and eggs. The Warehousemen's Association holds itself ready to give these figures to any who are interested, and they are published in a number of places. The warehouses in the city of New York also make their storage holdings of eggs public. Chicago refuses to do so. I fancy, however, fairly good estimates could be obtained of the quantity of eggs in storage in Chicago from those who are familiar with the warehousing trade of the city. There doesn't, however, seem to be any way to get at the holdings of the private concerns, such as Swift and Armour.

There is a general movement throughout the better element of the warehousing trade to make public all holdings in cold-storage warehouses, believing that this is better for the trade and also a protection to the warehousemen. While such a movement must necessarily be combated by conservatives and progress but slowly, it is firmly founded and will, I believe, ultimately succeed.

4. Poultry, eggs, meat, fish, game, etc., if put into storage fresh and properly handled from the storage standpoint—both before and after entering the warehouse—leave it in good condition up to the end of their season of production, which is generally a period of about twelve months. The keeping time for eggs is somewhat shorter than this, but the egg-producing season is also longer than that of the majority of seasonable articles. There is a certain amount of deterioration during storage, even at freezing temperatures, but it is slow and it is very slight by comparison with deterioration at temperature about freezing.

After six months poultry begins to lose some of its flavor and eggs are apt to acquire what is known as a "storage taste." We have not, however, found as yet that any positively unwholesome materials develop during storage when the foods are stored in good condition, nor that the food value is lessened except so far as its fresh flavor affects nutrition. This holds up to the end of twelve months' storage of poultry and eggs.

However, the treatment after removal from storage is often such as to render the food unfit for use. It is too frequently thawed in an unsanitary manner and improperly handled by the retailer, with results which are detrimental all along the line.

5. Cold-storage foods are sold as "cold stored" through every branch of the industry. The retailer, when the ultimate consumer is to be served, is apt to call all high-class goods "strictly fresh," regardless of past history; ordinary goods are "fresh" and the low-grade stuff is apt to be apologized for as "cold storage," though in a large percentage of cases it has never been in a cold-storage warehouse.

Such statements by the retailer have created an unfounded prejudice in the mind of the public—bad for the public, but good for the retailer's pocketbook. The public knows so little about seasonal production that it is easily fooled. For example, the housewife insistently demands fresh broiling chickens when there are none on the market. Therefore, the retailer is more apt to give her very good storage stock and assure her that it is fresh. If the stock is good he is ordinarily perfectly satisfied that he has told the truth.

Eggs follow the same rule. There are times during the year when only the small inner circle can be supplied with fresh eggs. The great majority of people who live on moderate or even more than moderate incomes will be given high-grade storage eggs, because they are really the best that the market affords. But the popular prejudice against cold storage, and ignorance in regard to seasonal food supply, is so great that the retailer falls back upon falsehood in order to supply his trade with the goods they really want.

I trust that the foregoing statements will assist Senator Heyburn to answer some of the questions now before the Lodge committee.

Yours, very truly,

M. E. PENNINGTON,
Chief of Food Research Laboratory.

DEPARTMENT OF AGRICULTURE,
OFFICE OF THE SECRETARY,
Washington, D. C., May 7, 1910.

Hon. W. B. HEYBURN,
United States Senate, Washington.

DEAR SENATOR: I am transmitting herewith from the Bureau of Chemistry additional data obtained by the inspectors of that bureau on the subject requested by you in connection with the consideration of Senate bill No. 7649, relating to cold-storage products.

Respectfully,

M. M. HAYES,
Acting Secretary.

UNITED STATES DEPARTMENT OF AGRICULTURE,
BUREAU OF CHEMISTRY,
Washington, D. C., May 6, 1910.

The SECRETARY OF AGRICULTURE.

SIR: I have had our inspectors get some additional data, collected at the request of Senator Heyburn in charge of the Lodge bill. I suggest that you transmit this data to Senator Heyburn, as he desires to have them incorporated with the minutes of the hearing.

Respectfully,

J. W. WILEY, *Chief.*

MAY 4, 1910.

Doctor WILEY, *Chief,*
Bureau of Chemistry.

DEAR SIR: With a view to determining the general practices concerning the cold storage of food products, the classes stored, the duration of storage, by whom stored, and the apparent physical effects upon the substances handled, our inspectors have made an investigation of 37 cold-storage establishments doing a general business, and which were located in a number of the more important commercial centers in various States, as is shown by the tabulated statement following:

Name.	Address.	Butter.	Eggs, shell.	Eggs, frozen.	Poultry.	Vegetables.
Eastern States Refrigerating Co	Jersey City, N. J	12 months	10 to 12 months		10 months	
Loomis Cold Storage Co	New York, N. Y					
F. C. Linde Storage Co	do	8 months	10 months			
Brooklyn Bridge Freezing Co	do					
Harrison Street Cold Storage Co	do	8 months	9 to 12 months			Celery, 2 months.
Heermancis Storage and Refrigerating Co	do	12 months	6 to 9 months	Indefinite period		Few days.
Merchants' Refrigerating Co	New York, N. Y., and Jersey City, N. J.	do	11 to 12 months	Indefinite	12 months	3 months.
Colorado Ice and Storage Co	Denver, Colo		4 to 6 months		3 to 6 months	4 to 6 months.
Capital Ice and Storage Co	do					
Littleton Creamery Co	do		6 to 9 months		6 months	
Southwestern Brewery Co	Albuquerque, N. Mex	(a)	(a)	(a)	(a)	(a)
Western Meat Co	do	(b)	(b)	(b)	(b)	(b)
Barr Meat Co	do		(b)	(b)	(b)	(b)
Utah Ice and Storage Co	Salt Lake City, Utah		8 months		3 months	
Diamond Cold Storage Co	Seattle, Wash					
Washington Cold Storage Warehouse	do	7 months	5 months		5 months	
A. Booth & Co	Detroit, Mich	2 to 7 months	5 to 9 months		8 to 10 months	
Atlantic Ice and Storage Co	Chattanooga, Tenn		7 to 11 months			
Armour & Co	do	(c)	(c)	(c)	(c)	(c)
Swift & Co	do	(d)	(d)	(d)	(d)	(d)
Chattanooga Packing Co	do	(e)	(e)	(e)	(e)	(e)
Morristown Produce and Ice Co	Morristown, Tenn		8 to 10 months		10 months	
East Tennessee Brewing Co	Knoxville, Tenn		do			
Armour & Co	do	(b)	(b)	(b)	(b)	(b)
Anheuser-Busch Brewing Association	Norfolk, Va					
Memphis Cold Storage Warehouse Co	Memphis, Tenn	1 month	6 months	1 month	3 months	1 to 6 months.
Union Storage Co	Pittsburg, Pa	6 to 10 months	6 to 11 months	1 to 3 months	1 to 4 months	1 month.
Weinberg Bros. Co	Galesburg, Ill					Potatoes, 6 months.
Peoria Artificial Ice Co	Peoria, Ill					
Washington Market and Storage Co	Washington, D. C	6 to 10 months	2 to 10 months	2 to 10 months	6 months	1 month.
Baltimore Refrigerating and Heating Co	Baltimore, Md	6 months	6 months			
Monarch Refrigerating Co	Chicago, Ill					
Norfolk Cold Storage and Ice Plant	Norfolk, Va					
Eastern Cold Storage Co	Boston, Mass					
Quincy Cold Storage Co	do					
Holt Ice and Cold Storage Co	Indianapolis, Ind					7 months.
Indianapolis Cold Storage Co	do	6 months	10 months			

Name.	Address.	Fresh fruit.	Dried fruit.	Cheese.	Fish.	Meats.
Eastern States Refrigerating Co	Jersey City, N. J	Apples, 8 months		12 months		
Loomis Cold Storage Co	New York, N. Y	Apples, 8 months; others less.				
F. C. Linde Storage Co	do	Apples, 10 months	6 months	10 months		
Brooklyn Bridge Freezing Co	do				1 to 10 months	
Harrison Street Cold Storage Co	do	Apples, 3 to 4 months.		8 to 12 months		
Heermancis Storage and Refrigerating Co	do	Several months	10 to 12 months			
Merchants' Refrigerating Co	New York, N. Y., and Jersey City, N. J.	6 months	7 months	10 to 12 months		4 to 9 months.
Colorado Ice and Storage Co	Denver, Colo	4 to 6 months		4 to 6 months	3 to 6 months	3 to 6 months.
Capital Ice and Storage Co	do				12 months	1 week to 3 months.
Littleton Creamery Co	do	8 to 9 months				6 to 12 months.
Southwestern Brewery Co	Albuquerque, N. Mex	(a)	(a)	(a)	(a)	(a)
Western Meat Co	do	(b)	(b)	(b)	(b)	(b)
Barr Meat Co	do	(b)	(b)	(b)	(b)	(b)
Utah Ice and Storage Co	Salt Lake City, Utah			3 months		
Diamond Cold Storage Co	Seattle, Wash				Salmon, 6 to 9 months.	
Washington Cold Storage Warehouse	do				Salmon 8, months.	
A. Booth & Co	Detroit, Mich	Berries and apples, 8 months.		9 months	4 to 6 months	9 months.
Atlantic Ice and Storage Co	Chattanooga, Tenn					
Armour & Co	do	(c)	(c)	(c)	(c)	(c)
Swift & Co	do	(d)	(d)	(d)	(d)	(d)
Chattanooga Packing Co	do	(e)	(e)	(e)	(e)	(e)
Morristown Produce and Ice Co	Morristown, Tenn					
East Tennessee Brewing Co	Knoxville, Tenn					1 week.
Armour & Co	do	(b)	(b)	(b)	(b)	(b)
Anheuser-Busch Brewing Association	Norfolk, Va					
Memphis Cold Storage Warehouse Co	Memphis, Tenn	6 weeks to 6 months	6 months	4 months		6 months.
Union Storage Co	Pittsburg, Pa	1 to 8 months	4 months	5 to 15 months		
Weinberg Bros. Co	Galesburg, Ill	Apples, 8 months				One-half to 1 week.
Peoria Artificial Ice Co	Peoria, Ill	do				
Washington Market and Storage Co	Washington, D. C	4 to 9 months	6 months	6 to 10 months	6 to 8 months	Few weeks.
Baltimore Refrigerating and Heating Co	Baltimore, Md		do			(f)
Monarch Refrigerating Co	Chicago, Ill					
Norfolk Cold Storage and Ice Plant	Norfolk, Va	Apples, 6 months	6 months			
Eastern Cold Storage Co	Boston, Mass					
Quincy Cold Storage Co	do					
Holt Ice and Cold Storage Co	Indianapolis, Ind	7 months				2 months.
Indianapolis Cold Storage Co	do	8 to 12 months	4 months			

[a] Stores only own beer.
[b] Stores only own meats.
[c] Stores only fresh meats for 1 week.
[d] Stores only own goods for 1 week
[e] Stores only B. A. I. products; very unclean.
[f] Also handle corned beef up to 1 year.

NOTE.—The Utah Ice and Storage Company stores also beer, nuts, and mince meats. The Atlantic Ice and Storage Company's plant is wet and unsanitary.

Name.	Address.	Butter.	Eggs, shell.	Eggs, frozen.	Poultry.	Vegetables.
Eastern States Refrigerating Co	Jersey City, N. J	12 months	10 to 12 months		10 months	
Loomis Cold Storage Co	New York, N. Y					
F. C. Linde Storage Co	....do	8 months	10 months			
Brooklyn Bridge Freezing Co	....do					
Harrison Street Cold Storage Co	....do	8 months	9 to 12 months			Celery, 2 months.
Heermancis Storage and Refrigerating Co	....do	12 months	6 to 9 months	Indefinite period		Few days.
Merchants' Refrigerating Co	New York, N. Y., and Jersey City, N. J.	....do	11 to 12 months	Indefinite	12 months	3 months.
Colorado Ice and Storage Co	Denver, Colo		4 to 6 months		3 to 6 months	4 to 6 months.
Capital Ice and Storage Co	....do					
Littleton Creamery Co	....do		6 to 9 months		6 months	
Southwestern Brewery Co	Albuquerque, N. Mex	(a)	(a)	(a)	(a)	(a)
Western Meat Co	....do	(b)	(b)	(b)	(b)	(b)
Barr Meat Co	....do	(b)	(b)	(b)	(b)	(b)
Utah Ice and Storage Co	Salt Lake City, Utah		8 months		3 months	
Diamond Cold Storage Co	Seattle, Wash					
Washington Cold Storage Warehouse	....do	7 months	5 months		5 months	
A. Booth & Co	Detroit, Mich	2 to 7 months	5 to 9 months		8 to 10 months	
Atlantic Ice and Storage Co	Chattanooga, Tenn		7 to 11 months			
Armour & Co	....do	(c)	(c)	(c)	(c)	(c)
Swift & Co	....do	(d)	(d)	(d)	(d)	(d)
Chattanooga Packing Co	....do	(e)	(e)	(e)	(e)	(e)
Morristown Produce and Ice Co	Morristown, Tenn		8 to 10 months		10 months	
East Tennessee Brewing Co	Knoxville, Tenn		....do			
Armour & Co	....do	(b)	(b)	(b)	(b)	(b)
Anheuser-Busch Brewing Association	Norfolk, Va					
Memphis Cold Storage Warehouse Co	Memphis, Tenn	1 month	6 months	1 month	3 months	1 to 6 months.
Union Storage Co	Pittsburg, Pa	6 to 10 months	6 to 11 months	1 to 3 months	1 to 4 months	1 month.
Weinberg Bros. Co	Galesburg, Ill					Potatoes, 6 months.
Peoria Artificial Ice Co	Peoria, Ill					
Washington Market and Storage Co	Washington, D. C	6 to 10 months	2 to 10 months	2 to 10 months	6 months	1 month.
Baltimore Refrigerating and Heating Co	Baltimore, Md	6 months	6 months			
Monarch Refrigerating Co	Chicago, Ill					
Norfolk Cold Storage and Ice Plant	Norfolk, Va					
Eastern Cold Storage Co	Boston, Mass					
Quincy Cold Storage Co	....do					
Holt Ice and Cold Storage Co	Indianapolis, Ind					7 months.
Indianapolis Cold Storage Co	....do	6 months	10 months			

Name.	Address.	Fresh fruit.	Dried fruit.	Cheese.	Fish.	Meats.
Eastern States Refrigerating Co	Jersey City, N. J	Apples, 8 months		12 months		
Loomis Cold Storage Co	New York, N. Y	Apples, 8 months; others less.				
F. C. Linde Storage Co	do	Apples, 10 months.	6 months	10 months		
Brooklyn Bridge Freezing Co	do				1 to 10 months	
Harrison Street Cold Storage Co	do	Apples, 3 to 4 months.		8 to 12 months		
Heermancis Storage and Refrigerating Co	do	Several months	10 to 12 months			
Merchants' Refrigerating Co	New York, N. Y., and Jersey City, N. J.	6 months	7 months	10 to 12 months		4 to 9 months.
Colorado Ice and Storage Co	Denver, Colo	4 to 6 months		4 to 6 months	3 to 6 months	3 to 6 months.
Capital Ice and Storage Co	do				12 months	1 week to 3 months.
Littleton Creamery Co	do	8 to 9 months				6 to 12 months.
Southwestern Brewery Co	Albuquerque, N. Mex	(a)	(a)	(a)	(a)	(a)
Western Meat Co	do	(b)	(b)	(b)	(b)	(b)
Barr Meat Co	do	(b)	(b)	(b)	(b)	(b)
Utah Ice and Storage Co	Salt Lake City, Utah			3 months		
Diamond Cold Storage Co	Seattle, Wash				Salmon, 6 to 9 months.	
Washington Cold Storage Warehouse	do				Salmon 8, months.	
A. Booth & Co	Detroit, Mich	Berries and apples, 8 months.		9 months	4 to 6 months	9 months.
Atlantic Ice and Storage Co	Chattanooga, Tenn					
Armour & Co	do	(c)	(c)	(c)	(c)	(c)
Swift & Co	do	(d)	(d)	(d)	(d)	(d)
Chattanooga Packing Co	do	(e)	(e)	(e)	(e)	(e)
Morristown Produce and Ice Co	Morristown, Tenn					
East Tennessee Brewing Co	Knoxville, Tenn					1 week.
Armour & Co	do	(b)	(b)	(b)	(b)	(b)
Anheuser-Busch Brewing Association	Norfolk, Va					
Memphis Cold Storage Warehouse Co	Memphis, Tenn	6 weeks to 6 months	6 months	4 months		6 months.
Union Storage Co	Pittsburg, Pa	1 to 8 months	4 months	5 to 15 months		
Weinberg Bros. Co	Galesburg, Ill	Apples, 8 months				One-half to 1 week.
Peoria Artificial Ice Co	Peoria, Ill	do				
Washington Market and Storage Co	Washington, D. C	4 to 9 months	6 months	6 to 10 months	6 to 8 months	Few weeks.
Baltimore Refrigerating and Heating Co	Baltimore, Md		do			(f)
Monarch Refrigerating Co	Chicago, Ill					
Norfolk Cold Storage and Ice Plant	Norfolk, Va	Apples, 6 months	6 months			
Eastern Cold Storage Co	Boston, Mass					
Quincy Cold Storage Co	do					
Holt Ice and Cold Storage Co	Indianapolis, Ind	7 months				2 months.
Indianapolis Cold Storage Co	do	8 to 12 months	4 months			

(a) Stores only own beer.
(b) Stores only own meats.
(c) Stores only fresh meats for 1 week.
(d) Stores only own goods for 1 week
(e) Stores only B. A. I. products; very unclean.
(f) Also handle corned beef up to 1 year.

NOTE.—The Utah Ice and Storage Company stores also beer, nuts, and mince meats. The Atlantic Ice and Storage Company's plant is wet and unsanitary.

The great majority of these institutions were found to be in a clean and sanitary condition, and in only three cases were the conditions such that exception could be taken to the propriety of housing any food substance under the conditions prevailing. It appears that one of the chief problems to be met by the management of these institutions is that of a proper ventilation in order to secure a dry and sweet atmosphere. This is accomplished generally by the liberal use of lime as an absorber of moisture in the air. This drying of the atmosphere, however, has the effect of abstracting moisture from the products themselves, and it appears to be invariable that substances lose in weight when stored for any appreciable length of time. The temperatures at which different classes of food products are stored are necessarily varied according to the variety, and also according to the judgment of the warehouseman. The period of storage of various food substances which constitute the bulk of the storage business is as follows:

Butter.—Storage begins about the end of May, continues throughout the summer, and begins to move during the fall months. The withdrawals are heaviest during winter and continue into spring, so that the stocks are usually depleted in April. Butter invariably shows loss of weight, due to evaporation. Unsalted butter is stated to be preferable for long storage periods, as it does not develop a strong or fishy odor found in salted butter. One warehouseman stated that butter which had been stored for two years would be considered undergrade, and would be sold only to bakers or for baking purposes.

Eggs in shell.—These begin to arrive the latter part of March and continue until July. They begin to move in October and continue to be withdrawn in increasing amounts until January. The stocks are usually depleted in March of the succeeding year, so that in no instance did our inspectors locate any shell eggs which had been in storage over one year. All of the storage houses place their eggs in rooms set aside for this particular purpose, which are kept as dry as possible, as very little moisture will be sufficient to cause eggs to mold or rot. All eggs loose weight through storage.

Eggs frozen.—Frozen eggs when owned by a packer may be stored for an indefinite period, but when owned by local merchants or bakers are usually withdrawn after a period of from one to three months.

Poultry.—Poultry begins to accumulate from August, when the "broilers" are put away, through the fall and early winter months, when turkeys, ducks, and geese are stored, and usually remain until the following spring and summer months from May to July. It appears that poultry deteriorates rapidly if improperly packed; that is, in a manner to prevent free access of air, and it was the opinion of a number of warehousemen that poultry should not be stored for a longer period than one year, as there is an undoubted loss in weight and drying of tissue. In one instance a lot of 12 baskets of sora, a species of rail, was found to be in storage since September, 1908, and it was the intent of the owner to have it remain there until September, 1910. In another case, a lot of 30,000 pounds of "broilers," which had been placed in storage in the fall of 1909, was found. As this class of poultry is becoming plentiful now it is probable that these goods will not be moved until some time next winter.

Vegetables.—As a rule fresh vegetables are not carried for a longer period than from six to nine months, as is the case with potatoes, onions, cauliflower, etc. Celery is usually removed in from one to three months, as this appears to be the limit of time before it deteriorates and becomes unfit for use.

Fresh fruit.—Apples are stored in the fall and winter and moved during the spring and summer so that all stocks are depleted before the new crop arrives. All apples lose in weight, and if removed from storage later than eight months after being taken in, must be resorted, for rot and decay usually begins to show at this time.

Some varieties of pears can not be carried over two months while others may be kept the entire spring and up to July.

Grapes arrive about the middle of August and are usually stored from three to four months.

Plums and peaches are short-lived commodities, usually being held in storage from one to two months.

Dried fruit.—Dried fruit is usually placed in storage by wholesale grocers and others carrying large stocks at the beginning of warm weather to prevent the development of worms and decay, and are kept in storage until the fall [illegible] withdrawn for sale at about the time the new pack makes its appear-

Cheese.—Cheese begins to accumulate about July 1 and is stored all summer, withdrawals beginning in the fall and lasting until the following spring. As a rule, cheese is never carried over one year, although there was one instance of a firm who, in order to obtain a particularly ripe cheese, permitted their stocks to age up to eighteen months. It appears to be a consensus of opinion that all cheese is improved by storage because of the so-called ripening process, and this may be hastened or retarded by the relatively high or low temperature at which stored.

Fish.—This appears to be one of the most difficult products to store successfully because of deterioration and loss in weight. The former may be due to the fact that often fish are carried for an appreciable length of time in fish boats under unfavorable conditions before storage, so that the quality is not first class when they are accepted by the warehouseman. It is stated that loss in weight during storage may be avoided by first dipping the fish in water and freezing before storage. This process causes each unit to be completely enveloped in an icy coating which seems to act as a hermetical seal. The consensus of opinion among storage men is that fish should not be stored longer than one season. The owner of a warehouse, located in the Northwest, claims that he has known of instances where salmon, for which it was impossible to find a market after storage for one season, was smoked and probably offered for sale as smoked fresh salmon.

Meats.—The bulk of meats are stored by the packing and slaughtering establishments and are usually moved from one distributing point to another, so that it is rather a difficult matter to determine the exact period of storage to which any particular carcass may have been subjected. The commercial storage houses hold some of their stocks from four to twelve months although a great proportion seem to move within one to four months. One specimen of meat which has been in storage for over one year had become very light in color and very much lighter in weight.

Milk, cream, and ice cream.—These products were never found to be stored longer than a few days, withdrawals being made by the owners, who were usually local dealers, as their business might demand.

The periods of time indicating the length of storage for the various food substances, shown on the tabulated statement, were those furnished by each individual establishment, and would not be indicative of the storage life of an article which had been once removed, reshipped, and again placed in storage at some distant point. That this is done appears to be the opinion of some storage men, who state that substances deteriorate much more rapidly after having been taken from storage, exposed, and again stored. Not a few of the warehousemen express opinions that they consider it wise to limit the storage of all substances, one year being indicated by the majority as the maximum time.

It did not appear in any instance that storage goods were identified as such when removed and exposed for sale. This would be highly desirable and almost necessary, as the consumer has ordinarily no means of distinguishing between a fresh and a stored article. This was illustrated recently by the sale of several cold-storage shad to one of our inspectors as fresh fish, and also by the practice prevalent in the district of the sale of storage eggs as fresh, until the seizure of a lot of such goods and the prosecution of a local dealer for this offense.

Respectfully,

W. G. CAMPBELL,
Chief Inspector.

FRIDAY, MAY 20, 1910.

SENATE COMMITTEE ON MANUFACTURES,
Friday, May 20, 1910—10 a. m.

The committee met pursuant to adjournment.

Present: Senators Heyburn (chairman), Gallinger, Oliver, and Smith.

STATEMENT OF J. F. NICKERSON, OF CHICAGO, ILL.

The CHAIRMAN. What is your name, please?

Mr. NICKERSON. J. F. Nickerson.

The CHAIRMAN. What is your position?

Mr. NICKERSON. I am chairman of the American Association of Refrigeration and publisher of Ice Refrigeration, of Chicago.

The CHAIRMAN. What is the name of the organization?

Mr. NICKERSON. American Association of Refrigeration. That includes various establishments that are vitally interested in mechanical refrigeration or refrigeration of any kind.

The CHAIRMAN. Are you engaged in storing for other people, or do you pack and store your own goods?

Mr. NICKERSON. I am not personally engaged in the storage business.

The CHAIRMAN. Are those companies that you spoke of engaged in storage for hire?

Mr. NICKERSON. Yes, sir; a certain proportion of them. There are quite a number who simply store, of course, on their own account.

The CHAIRMAN. I would like to have that list. I would like to have a statement as to which of the companies store for hire, and then a statement of those that store on their own account.

Mr. NICKERSON. I will try and make up a list for you.

The CHAIRMAN. It is quite important that we have it, because it presents the matter from a different standpoint; those who store for hire and have no interest in the commodities stored belong to one class of cold-storage men, and those who store on their own account and are responsible for the character of the goods—they belong to a different class, so we want to make the inquiry along the proper lines. That is the reason I ask you to separate them.

Mr. NICKERSON. I will try and have such a list prepared for you and send it to you as soon as possible.

The CHAIRMAN. Now, have you the charge or control of any particular company?

Mr. NICKERSON. No; I have not, personally.

The CHAIRMAN. Can you tell me the quantity of meat—beef—held in storage at any particular time?

Mr. NICKERSON. No; we haven't any statistics that will give those figures, but Mr. Becker has with him some figures as to the quantity of beef and other commodities in storage coming under refrigeration during the period of a year.

The CHAIRMAN. During different periods?

Mr. NICKERSON. Yes, sir.

The CHAIRMAN. Who has that testimony?

Mr. NICKERSON. Mr. Becker.

The CHAIRMAN. Now, what particular line of facts have you?

Mr. NICKERSON. Well, we want more particularly, so far as I am personally concerned, to present this resolution that was passed at the last annual meeting of our association in reference to this cold-storage agitation and legislation, and to protest against the passage of the bill as this proposed bill is printed. The following are resolutions passed by the American Association of Refrigeration at the annual meeting, held in New York City May 9 and 10, 1910:

Whereas the benefits derived by the people from the conservation of perishable foods and food products by cold-storage methods are not yet appreciated or understood; and

Whereas exhaustive tests and experiments by the experts attached to the United States Department of Agriculture, whose work, covering years of intelligent specialized efforts, have placed the question of the utility and reliability of this method of preserving many of the most valuable foods for long periods of time beyond all cavil or reason for doubt; and

Whereas the present world-wide popular unrest growing out of an economic condition which has resulted in a considerable increase in the cost of living is being exploited to the great injury of those employing this natural mode of preventing destructive changes in fruit, without chemical treatment, thereby conserving it for use in its natural state in times of shortage of the natural supply; and

Whereas it is one of the objects of this association to extend its aid and the influence of its scientific and commercial prestige to those industries especially which employ refrigeration for the public good; and

Whereas the bulletins issued by the Pure Food and the Pomological Divisions of the Department of Agriculture and the papers prepared on the subject for the First International Congress of Refrigeration by the world's experts conclusively demonstrate the great value of this method of food conservation: Therefore

Be it resolved, That this meeting pledge the membership of the American Association of Refrigeration, and through its affiliation with the International Association of Refrigeration, pledge the refrigerating industries of the world to in every proper and reasonable way influence careful study of all such information by legislative bodies to the end that accurate knowledge of the subject may influence their action and thus neutralize the prejudice of public clamor.

We do not, in fact, consider it necessary, or that it is calculated to relieve the situation in any way, and would more likely cause harmful effects to the producers and the storage men, and the consumer as well.

The CHAIRMAN. What feature of the bill do you refer to?

Mr. NICKERSON. We feel that the time limit is unnecessary, as no one time can be satisfactorily set for all different commodities.

The CHAIRMAN. Now, in regard to inspection of articles when they go into storage for the first time, and when they are removed, what is your position on that matter?

Mr. NICKERSON. I think the cold-storage warehouses have no objection to inspection, providing that inspection can be made so that it will not hamper the business and prove too costly.

The CHAIRMAN. It wouldn't be any more difficult than the present meat-inspection laws, would it?

Mr. NICKERSON. It wouldn't be any more difficult. The only question is whether the added expense and restriction would be liable to discourage the cold-storage business, and consequently the production of the necessary surplus to go into cold storage.

The CHAIRMAN. Now, do you refer to all kinds of meats and produce?

Mr. NICKERSON. I refer to general produce; not so particularly with meat, because that is handled by the meat packers almost entirely; very little of it goes into the general storage houses.

The CHAIRMAN. Well, you refer now to storage for hire?

Mr. NICKERSON. Yes, sir.

The CHAIRMAN. And not storage on account of any party?

Mr. NICKERSON. Yes, sir.

The CHAIRMAN. Now, your objection to it is that it would be inconvenient and somewhat expensive. Now, is there any other objection to inspection of material going into storage?

Mr. NICKERSON. No.

The CHAIRMAN. Or when it is taken out of storage?

Mr. NICKERSON. No objections other than stated, except that, of course, at the present time goods are now inspected by the owners or the cold-storage people when it goes into cold storage. For instance, all the cases of eggs are always candled when they come out before placed on the market, but our contention is that the inspection of those goods really should be made at the point where they are offered for sale, as the time they are in cold storage has very little——

The CHAIRMAN. Do you keep records so you could state the time that any particular thing had been in cold storage?

Mr. NICKERSON. Some houses do.

The CHAIRMAN. Any objection to labeling the goods as to the dates?

Mr. NICKERSON. No objection to the labeling of the goods, but that would necessarily entail an inspection, which would, of course, add to the rather unnecessary expense.

The CHAIRMAN. Well, is there any objection to the date of the killing, in the case of meats, or the production of other commodities being placed upon the label or placed upon a package of goods?

Mr. NICKERSON. I think it would be proper in many cases.

The CHAIRMAN. In what cases?

Mr. NICKERSON. In cases where the goods were shipped to a cold-storage house by commission merchants or dealers; they have no means of knowing when those goods were killed. Of course, with the packer that is somewhat different, because they are stored in establishments where killed.

The CHAIRMAN. If you were to refuse to receive goods except those having a date, that would put a burden and responsibility on the party who brings them to you, and would he not be content to leave it there?

Mr. NICKERSON. I prefer, Mr. Chairman, that that question be asked Mr. Brownell, who is engaged in that business of killing poultry, and he would be in a position to answer that better than I am.

The CHAIRMAN. Have you stated all the objections that you have to this class of legislation? I would suggest to you that your objections had better be pointed to the class of legislation rather than to this particular bill, because this bill will be subject to amendment, and the committee have already in mind the enlargement of the scope of the bill and also some modifications in reference to the arbitrary date. These matters will be considered by the committee in executive session, but the consideration will be based on testimony that is taken, or the showing that is made, and for that reason we have opened the hearing very liberally, so that you are not confined to the consideration of the terms of this bill at all, but rather to the question of inspection of storage; that is really what it amounts to.

Mr. NICKERSON. Well, as I have stated, the cold-storage warehousemen have no objection to inspection if it can be done in a prac-

tical way that will not hamper the business, but there is an objection to placing a time limit on the storage of goods.

The CHAIRMAN. But none to a time label?

Mr. NICKERSON. None to a time label if it is practicable to do so without having unnecessary restrictions.

The CHAIRMAN. Now, how do you come in contact with this matter, by reason of the nature of your duties?

Mr. NICKERSON. Well, as secretary of this association, of course I am in close contact with the various users of refrigeration, particularly, of course, the cold-storage warehouses, and as publisher of Ice Refrigeration, and for years I have been familiar with the conduct of the business and the methods they have used.

The CHAIRMAN. Well, for how long?

Mr. NICKERSON. Well, for the last twenty years.

The CHAIRMAN. Where?

Mr. NICKERSON. In Chicago.

The CHAIRMAN. Now, what is the scope of your actual experience in the way of commodities?

Mr. NICKERSON. Well, simply the observation——

The CHAIRMAN. I mean, rather, the articles, the class of articles covering meats and poultry.

Mr. NICKERSON. You mean as to what should be handled?

The CHAIRMAN. What is the scope with which you are familiar?

Mr. NICKERSON. Well, in general, perishable food products; I am familiar with the time it is necessary to keep those goods in cold storage. For instance, with most articles there is very little of them that are retained in cold storage a year, because in that event they would lap over into the new season which would not make the carrying of the goods profitable. There are some exceptions to that, in the case of butter and cheese.

The CHAIRMAN. How long, for instance, is butter kept in cold storage? Give me the running time?

Mr. NICKERSON. I suppose from six——

The CHAIRMAN. The maximum, the minimum, and the average.

Mr. NICKERSON. The average is from six to nine months, although some of it is kept for ten months probably, and more.

The CHAIRMAN. Now, do you carry any butterine or oleomargarine in cold storage?

Mr. NICKERSON. Yes, sir.

The CHAIRMAN. How much oleomargarine or butterine is carried in cold storage?

Mr. NICKERSON. I haven't any figures to state what the amount of that would be.

The CHAIRMAN. Can you obtain the figures?

Mr. NICKERSON. No; I think it would be extremely difficult to obtain that, because the greater part of that is stored by the manufacturers of oleomargarine.

The CHAIRMAN. Well, do you receive it all as butter in storage?

Mr. NICKERSON. That I wouldn't be prepared to state; I think Mr. Brownell can give you better information on that.

The CHAIRMAN. Who can give that information?

Mr. NICKERSON. Mr. Brownell can give it.

Mr. BROWNELL. I don't think that is ever stored as butter.

The CHAIRMAN. So that when you speak of butter, you mean real butter?

Mr. NICKERSON. Yes.

The CHAIRMAN. Now, do you know about poultry—the length of time poultry is kept in cold storage?

Mr. NICKERSON. I would refer that to Mr. Brownell.

The CHAIRMAN. What figures have you; have you any tables or classification here?

Mr. NICKERSON. We have some figures, statistics, that Mr. Becker will submit to you.

The CHAIRMAN. So that the testimony is really with those other two gentlemen?

Mr. NICKERSON. Yes, sir; most of the testimony.

The CHAIRMAN. Then we will withdraw you from the stand at present.

Mr. NICKERSON. Very well, sir.

STATEMENT OF MR. VICTOR H. BECKER, OF CHICAGO, ILL.

The CHAIRMAN. Will you please give your name to the stenographer?

Mr. BECKER. Victor H. Becker.

The CHAIRMAN. Where do you live?

Mr. BECKER. Chicago, Ill.

The CHAIRMAN. What is your occupation?

Mr. BECKER. I am a refrigerating engineer.

The CHAIRMAN. Give your address in Chicago, please.

Mr. BECKER. 4147 Michigan avenue.

The CHAIRMAN. You are a refrigerating engineer?

Mr. BECKER. Yes, sir.

The CHAIRMAN. How long have you been engaged in connection with refrigeration?

Mr. BECKER. Thirty-six years.

The CHAIRMAN. In what particular branch of it?

Mr. BECKER. All branches of refrigeration.

The CHAIRMAN. For storage and for owners?

Mr. BECKER. Yes, sir; for ice manufacturers—all branches of the refrigerating industry.

The CHAIRMAN. We will commence with the purposes of this bill, with regard to meat, and in that I include beef, mutton, pork, and veal. Can you tell me how much meat is in storage in Chicago?

Mr. BECKER. We have the entire matter tabulated, and I will submit that, if you please.

The cold-storage interests of the country have at all times, and they do now, court the fullest investigation and the closest scrutiny by expert legislative, commercial, and scientific authorities into the methods and effects of their business, which business, when it shall have grown to the proportions the interests of the producer and the consumer of perishable foods alike demand it shall reach, will at once afford treasure houses filled with palatable and healthful foods for the poor and conservatories of luxuries for the rich.

We urge opposition to the Lodge bill not only because it proposes a limit to the period of storage for perishable foods indiscriminately, whether the goods may be safely and economically stored a longer or

shorter time without suffering deterioration, but more particularly because its provisions would impose costly and even prohibitive restrictions upon the conservation by a perfectly natural method of the people's most valuable foods.

That the foods should be safely guarded against speculative influences is not denied, but legislation to this end to be effective without being discriminative and harmful should be directed at all classes of conserved foods, whether preserved by drying, by salting, by pickling, by smoking, by canning, by chemical treatment, or by cold-storage preservation in the natural state.

That the latter class of food should be selected for legislation which will materially add to their cost to the people is primarily an unjust discrimination against a perfectly legitimate and rapidly growing business interest.

Not the cold-storage house, but the speculator, should be legislated against. Cold-storage houses and refrigerator cars, when their necessary numbers and the perfection of their operation shall have been still more fully realized, will stand to mankind in the relation of an assurance of quality and ample supply to urgent need. They will reduce and will not enhance the average prices of perishable provisions, because they operate to encourage their cultivation and to prevent their waste through decay, thus materially increasing the visible supply. The improvement in the quality of fruit and vegetables grown at great distances from the principal centers of population, as well as those grown at home, which has been brought about directly by refrigeration through the vigilant inspection necessary before acceptance for storage, is apparent. The better maturing of goods under close observation is made possible, because vegetables and fruit gathered for refrigeration are permitted to much more fully ripen before being gathered for refrigeration storage and transportation.

As yet only an exceedingly small percentage of the total production of perishable produce reaches cold-storage warehouses. When enough of these shall have been constructed so that their contents will be in such ratio to a season's crop as will entitle them to be called reservoirs of the surplus, they may operate to slightly raise the prices of certain perishable food supplies at their stores at the time of their greatest production, and therefore of their lowest natural value, because they will create a demand for storage in addition to that for immediate consumption. This, on the other hand, through encouraging production will increase the supply, and under the laws governing supply and demand will lower the prices, as against a decreased production later in the season, through having increased the visible supply.

Of course, when through the manipulation of speculative influences cold-storage houses are employed to secrete or withhold goods from a market demanding them at fair prices, it may be charged that they are used to raise prices. Shall grain elevators be condemned and restricted because they can be used to hold their contents from the consumer?

The cold-storage house is not responsible for the high price of perishable provisions, nor is the grain elevator responsible for the high price of grain. On the contrary, because cold-storage houses accomplish the successful preservation of perishable foods in seasons of their glut they increase the visible supply of such foods throughout the

The great majority of these institutions were found to be in a clean and sanitary condition, and in only three cases were the conditions such that exception could be taken to the propriety of housing any food substance under the conditions prevailing. It appears that one of the chief problems to be met by the management of these institutions is that of a proper ventilation in order to secure a dry and sweet atmosphere. This is accomplished generally by the liberal use of lime as an absorber of moisture in the air. This drying of the atmosphere, however, has the effect of abstracting moisture from the products themselves, and it appears to be invariable that substances lose in weight when stored for any appreciable length of time. The temperatures at which different classes of food products are stored are necessarily varied according to the variety, and also according to the judgment of the warehouseman. The period of storage of various food substances which constitute the bulk of the storage business is as follows:

Butter.—Storage begins about the end of May, continues throughout the summer, and begins to move during the fall months. The withdrawals are heaviest during winter and continue into spring, so that the stocks are usually depleted in April. Butter invariably shows loss of weight, due to evaporation. Unsalted butter is stated to be preferable for long storage periods, as it does not develop a strong or fishy odor found in salted butter. One warehouseman stated that butter which had been stored for two years would be considered undergrade, and would be sold only to bakers or for baking purposes.

Eggs in shell.—These begin to arrive the latter part of March and continue until July. They begin to move in October and continue to be withdrawn in increasing amounts until January. The stocks are usually depleted in March of the succeeding year, so that in no instance did our inspectors locate any shell eggs which had been in storage over one year. All of the storage houses place their eggs in rooms set aside for this particular purpose, which are kept as dry as possible, as very little moisture will be sufficient to cause eggs to mold or rot. All eggs loose weight through storage.

Eggs frozen.—Frozen eggs when owned by a packer may be stored for an indefinite period, but when owned by local merchants or bakers are usually withdrawn after a period of from one to three months.

Poultry.—Poultry begins to accumulate from August, when the "broilers" are put away, through the fall and early winter months, when turkeys, ducks, and geese are stored, and usually remain until the following spring and summer months from May to July. It appears that poultry deteriorates rapidly if improperly packed; that is, in a manner to prevent free access of air, and it was the opinion of a number of warehousemen that poultry should not be stored for a longer period than one year, as there is an undoubted loss in weight and drying of tissue. In one instance a lot of 12 baskets of sora, a species of rail, was found to be in storage since September, 1908, and it was the intent of the owner to have it remain there until September, 1910. In another case, a lot of 30,000 pounds of "broilers," which had been placed in storage in the fall of 1909, was found. As this class of poultry is becoming plentiful now it is probable that these goods will not be moved until some time next winter.

Vegetables.—As a rule fresh vegetables are not carried for a longer period than from six to nine months, as is the case with potatoes, onions, cauliflower, etc. Celery is usually removed in from one to three months, as this appears to be the limit of time before it deteriorates and becomes unfit for use.

Fresh fruit.—Apples are stored in the fall and winter and moved during the spring and summer so that all stocks are depleted before the new crop arrives. All apples lose in weight, and if removed from storage later than eight months after being taken in, must be resorted, for rot and decay usually begins to show at this time.

Some varieties of pears can not be carried over two months while others may be kept the entire spring and up to July.

Grapes arrive about the middle of August and are usually stored from three to four months.

Plums and peaches are short-lived commodities, usually being held in storage from one to two months.

Dried fruit.—Dried fruit is usually placed in storage by wholesale grocers and others carrying large stocks at the beginning of warm weather to prevent the development of worms and decay, and are kept in storage until the fall and then withdrawn for sale at about the time the new pack makes its appearance.

Cheese.—Cheese begins to accumulate about July 1 and is stored all summer, withdrawals beginning in the fall and lasting until the following spring. As a rule, cheese is never carried over one year, although there was one instance of a firm who, in order to obtain a particularly ripe cheese, permitted their stocks to age up to eighteen months. It appears to be a consensus of opinion that all cheese is improved by storage because of the so-called ripening process, and this may be hastened or retarded by the relatively high or low temperature at which stored.

Fish.—This appears to be one of the most difficult products to store successfully because of deterioration and loss in weight. The former may be due to the fact that often fish are carried for an appreciable length of time in fish boats under unfavorable conditions before storage, so that the quality is not first class when they are accepted by the warehouseman. It is stated that loss in weight during storage may be avoided by first dipping the fish in water and freezing before storage. This process causes each unit to be completely enveloped in an icy coating which seems to act as a hermetical seal. The consensus of opinion among storage men is that fish should not be stored longer than one season. The owner of a warehouse, located in the Northwest, claims that he has known of instances where salmon, for which it was impossible to find a market after storage for one season, was smoked and probably offered for sale as smoked fresh salmon.

Meats.—The bulk of meats are stored by the packing and slaughtering establishments and are usually moved from one distributing point to another, so that it is rather a difficult matter to determine the exact period of storage to which any particular carcass may have been subjected. The commercial storage houses hold some of their stocks from four to twelve months although a great proportion seem to move within one to four months. One specimen of meat which has been in storage for over one year had become very light in color and very much lighter in weight.

Milk, cream, and ice cream.—These products were never found to be stored longer than a few days, withdrawals being made by the owners, who were usually local dealers, as their business might demand.

The periods of time indicating the length of storage for the various food substances, shown on the tabulated statement, were those furnished by each individual establishment, and would not be indicative of the storage life of an article which had been once removed, reshipped, and again placed in storage at some distant point. That this is done appears to be the opinion of some storage men, who state that substances deteriorate much more rapidly after having been taken from storage, exposed, and again stored. Not a few of the warehousemen express opinions that they consider it wise to limit the storage of all substances, one year being indicated by the majority as the maximum time.

It did not appear in any instance that storage goods were identified as such when removed and exposed for sale. This would be highly desirable and almost necessary, as the consumer has ordinarily no means of distinguishing between a fresh and a stored article. This was illustrated recently by the sale of several cold-storage shad to one of our inspectors as fresh fish, and also by the practice prevalent in the district of the sale of storage eggs as fresh, until the seizure of a lot of such goods and the prosecution of a local dealer for this offense.

Respectfully,

W. G. CAMPBELL,
Chief Inspector.

The value of a refrigerating plant complete is usually estimated in round numbers at about $500,000. If this is true, it would mean that about $20,000,000 is invested in refrigerating machinery and apparatus.

If the machinery end be taken as representing approximately one-quarter to one-fifth of the total value of the premises, this would mean that between $800,000,000 and $1,000,000,000 is invested in refrigerating plants of all kinds, which is probably short of the actual facts.

It is also shown in the paper above referred to that the aggregate value of the various products that pass through the refrigerated rooms or are submitted to refrigeration in the course of trade during a year is in excess of $2,500,000,000. Among the most important food products placed in cold storage are mentioned eggs, butter, and apples.

The necessity and advantage of cold storage for eggs is evident from a study of the market in any large city. For example, in New York City the egg receipts April 20, 1910, were 43,000 cases of 30 dozen each, and for the week ending April 23 the receipts were over 200,000 cases. The week before they were 192,000 cases. The demand of the city for consumption during that period was about 12,000 cases per day, as shown in the daily market reports published in the Journal of Commerce of that city. From the daily receipts of 30,000 to 40,000 cases and the daily consumption of only 12,000 cases it is evident that there would have been either a waste or slump in the prices, or else the surplus will have to be stored. The surplus, which consisted of the best candled fresh eggs, as no others will keep well, was placed in cold storage.

The same facts hold true in other cities. In Chicago the difference between current receipts during April and local demand is even greater than in New York and more eggs go into storage there. According to figures given in the Government Crop Reporter, receipts of eggs in Chicago for the month of January, 1910, were 65,172 cases and for April, 773,656 cases. For the same months the receipts for New York City were 137,408 and 723,257, respectively.

The average quantity placed in cold storage each year in New York City (including Jersey City) is about 700,000 cases and at Chicago about 1,000,000 cases.

It is estimated that there are at least 500 cold-storage houses, large and small, throughout the country where eggs are stored in the spring. The total quantity thus stored, according to the best available statistics secured by the editors of such publications as the New York Produce Review, Chicago Price Current, Ice and Refrigeration, and others, as well as by statistically inclined dealers in the trade, gives the average quantity placed in cold storage each spring at a little over 3,000,000 cases.

This is about 5 per cent of the total estimated production. According to government estimates made in 1900, the total egg production in that year was about 14,000,000,000, or, say, 39,000,000 cases. It has been shown that the average yearly increase is about 5 per cent and the average during the past ten years was about 75,000,000 yearly, so that in 1910 the total production was not far from 21,500,000,000 or in round numbers 60,000,000 cases, 5 per cent of

which is 3,000,000, the quantity actually placed in cold storage in 1909.

The cold-storage supply is drawn upon whenever the supply of fresh eggs falls below the market demand. Even in August, September, and every month thereafter eggs are withdrawn from cold storage. The largest number go out in December. January usually cleans out cold-storage eggs, as fresh southern eggs then begin to arrive in considerable quantity and the market price begins to fall below the point where profit is possible in cold-storage eggs.

Some eggs are placed in cold storage during the summer months or at any time when the current receipts exceed the demand. These hot-weather eggs being weaker and usually less "fresh" than the April eggs are much more apt to go wrong in cold storage inside of three months than is the April egg in nine to ten months, as every cold-storage man and egg dealer knows.

The production of 1907, according to estimates by the Department of Agriculture, amounted in total to 1,721,329 pounds. The production in 1908 was about 2 per cent greater or amounted to 1,755,755 pounds. The production in 1909 was about the same as in 1907, the demand being greater and, because of improved financial conditions as compared with 1907 and growth of population, prices ruled higher.

According to statistics compiled by the Chicago Daily Price Current, the total quantity of butter in cold storage the latter part of August, or at the time storage stocks are at their maximum, was in 1907, 1,250,000 tubs, and in 1908, 1,590,000 tubs; figuring the tub at 60 pounds, this would mean that 75,000,000 pounds were stored in 1907 and 95,400,000 pounds in 1908. That is to say, the maximum amount in cold storage was less than 5 per cent of the total produced in 1907 and about 6 per cent of the total produced in 1908. In 1909 the maximum quantity in cold storage was estimated at about 80,000,000 to 85,000,000 pounds, or about 5 per cent of the total production. The storage stocks are being drawn upon continuously during the season of scant production; thus the report of the Associated Warehouses, comprising 30 large cold-storage warehouses, shows that on December 1, 1909, these houses had in cold storage 37,465,625 pounds (December 1, 1908, 44,692,759; December 1, 1907, 40,915,947); on March 1, 1910, the same houses held but 11,279,791 pounds, and on April 1, 1910, only 4,818,717 pounds, or a little more than enough for one day's consumption for the entire country.

Most of the long storage butter goes into the coolers in May, June, and July, when the cows are fresh and they have plenty of fresh young grass. This results not alone in a largely increased production of cream and butter fat, but in yield of butter of the very best quality. The production during these months is greatly in excess of market needs. The long-term storage butter is held at a temperature of zero or 5 degrees below, and this "June" butter is of much better quality and brings a better price during the winter than freshly made butter.

The dairy market reports in Boston during February, 1910, show that fresh butter was sold at 25 cents to 30 cents a pound, and cold-storage butter, 7 months old, was sold at from 31 cents to 33 cents per pound.

Of the grand total production of between 30,000,000 and 60,000,000 barrels yearly the cold-storage warehouses receive between 3,000,000 and 5,000,000 barrels. Most of the larger cold-storage warehouses have apple rooms, but there are also hundreds of smaller cold-storage warehouses scattered throughout the country, especially in the vicinity of the principal apple-producing regions that are devoted wholly or mainly to apple storage. That apples even of the tender variety will keep in cold storage was amply shown at the Louisiana Purchase Exposition in St. Louis, where such tender varieties as Jonathans and Grimes's Golden were shown upon the tables of the Agricultural Building during August and were apparently in perfect condition after a week's exposure, although they had previously been in cold storage for more than ten months.

The value of fresh meat submitted to mechanical refrigeration—most of it, however, for from three to four weeks only—is given in the paper presented at the First International Congress of Refrigerating Industries as about $1,500,000,000 yearly.

The quantity of poultry frozen and held in cold storage in the course of a year, as given by the same author, is about 100,000,000 pounds, valued at $45,000,000.

The value of eggs placed in cold storage yearly is given as about $21,000,000.

The value of butter placed in cold storage yearly is given as about $25,000,000, and cheese about $5,000,000, not including that held in chilled rooms for curing, which would add double as much more, probably.

The value of brewery products that are stored for varying lengths of time in cold storage yearly is given as about $325,000,000.

Fish frozen and held in cold storage represents a value estimated at approximately $30,000,000. There are about 75 establishments where mechanical refrigeration is used to freeze fish or cool chambers for storage of fish.

The value of apples, fresh and dried, that are placed in cold storage annually is estimated, in 1903, at $12,500,000, and is now probably not far from $15,000,000.

Furs and fabrics, upholstery and fine furniture are placed in special cold-storage rooms provided for the purpose, some of which as, for instance, the chill rooms of Marshall Field & Co., Chicago, contain 150,000 cubic feet of cold-storage space. The estimated value of this class of goods placed in cold storage each summer is between $50,000,000 and $75,000,000.

There are 100 establishments in the United States engaged in the manufacture of ice and refrigerating machinery. The aggregate capital employed in this manufacture is in excess of $25,000,000, and the aggregate value of the output for one year is estimated as in excess of $40,000,000.

I haven't any special knowledge on the principal subjects; mine is general.

The CHAIRMAN. I notice that you give the capacity in Chicago and New York and other cities?

Mr. BECKER. Yes, sir.

The CHAIRMAN. Now, in your judgment, how long can beef be kept in cold storage and still be in good condition for the consumer?

Mr. BECKER. According to the goods and the character of the beef, from four weeks to eight or nine months.

The CHAIRMAN. Now, it does depend some on the condition in which it goes into cold storage?

Mr. BECKER. Altogether.

The CHAIRMAN. Take first the custom storage; from where does the meat that goes into custom storage as a rule come?

Mr. BECKER. From the smaller killers.

The CHAIRMAN. In the country?

Mr. BECKER. No; in the cities and some of it shipped in from the country by express.

The CHAIRMAN. Any considerable portion of it come in from the country or other cities?

Mr. BECKER. I don't think so; I think the proportion is very small.

The CHAIRMAN. So that the meat that is stored in Chicago is principally killed in Chicago?

Mr. BECKER. Yes, sir.

The CHAIRMAN. Now, how soon after killing, as a rule, does it go into cold storage?

Mr. BECKER. That depends upon the construction of the word "storage." Meat is put into chilled rooms immediately after it is washed—into cooling rooms.

The CHAIRMAN. About how long does it stay there?

Mr. BECKER. It stays there according to the size of the piece, according to the thickness of the meat. It stays there until the animal heat has been removed.

The CHAIRMAN. Approximately how long?

Mr. BECKER. Three or four weeks.

The CHAIRMAN. During that time it is in the cool rooms; at about what temperature?

Mr. BECKER. About 36 to 40 degrees.

The CHAIRMAN. And from three to four weeks?

Mr. BECKER. Yes, sir.

The CHAIRMAN. Then it goes into cold storage, does it?

Mr. BECKER. Then, if it is storage beef, it goes into cold storage. Otherwise, it is shipped in refrigerator cars or is delivered to the local butchers and branch dispensing houses, where it is still kept in cold storage.

The CHAIRMAN. That is, it is put in the cold-storage boxes of the local houses?

Mr. BECKER. Yes, sir.

The CHAIRMAN. Now, have those houses in Chicago generally branch houses in the East?

Mr. BECKER. Yes, sir.

The CHAIRMAN. Have they one here in the city?

Mr. BECKER. Yes, sir.

The CHAIRMAN. How long is it kept in the Chicago cold storage before it is sent out to the branch houses?

Mr. BECKER. Three to four weeks; some of it possibly five.

The CHAIRMAN. So it comes from the cooling rooms practically to the branch storage, does it?

Mr. BECKER. Yes, sir.

The CHAIRMAN. Now, you are speaking of the meat that is stored by the owners?

Mr. BECKER. Yes, sir.

The CHAIRMAN. Have you knowledge also of the customs storage houses?

Mr. BECKER. Not so much; I haven't so full knowledge of the details of their workings. The cold-storage men themselves are better qualified to speak on that subject.

The CHAIRMAN. Have you stated in this table the maximum and average length of time that beef is kept in cold storage?

Mr. BECKER. No, sir.

The CHAIRMAN. Give it to us, please.

Mr. BECKER. I do not know that I could do that authentically.

The CHAIRMAN. Give it to us as nearly as you can.

Mr. BECKER. The packers more particularly would be the persons to give you that information; you mean the length of time it is stored—in storage as storage meat?

The CHAIRMAN. Yes, sir.

Mr. BECKER. Oh, that would be three, four, or five weeks.

The CHAIRMAN. Is that the period after it goes out of the cooling room?

Mr. BECKER. That is from the time—that is after it is killed.

The CHAIRMAN. Now, when it goes from the cooling room, it goes into cold storage, does it, unless it is retained?

Mr. BECKER. That which is intended for cold storage.

The CHAIRMAN. Now, how long does that remain in cold storage?

Mr. BECKER. I do not think it remains very long; not more than five or six weeks; I think it deteriorates so that they can not afford to keep it.

The CHAIRMAN. Do you mean deteriorates in cold storage?

Mr. BECKER. It deteriorates in cold storage; its appearance.

The CHAIRMAN. That is, in what time does it begin to deteriorate?

Mr. BECKER. Anywhere, according to the character of the meat, from six weeks on—eight weeks.

The CHAIRMAN. What is the nature of that deterioration?

Mr. BECKER. Discoloration of the surface; it is dry; the beauty of a quarter of beef is the pretty pink and wheat color of it.

The CHAIRMAN. When it loses that it becomes waxy, does it?

Mr. BECKER. No; it becomes dark, and it doesn't bring the price on the market, and they can not afford to carry it.

The CHAIRMAN. Now, does the fat deteriorate first in the meat?

Mr. BECKER. I guess probably it would.

The CHAIRMAN. It becomes rancid?

Mr. BECKER. No, not rancid; simply discolored; it doesn't get rancid until after long storage.

The CHAIRMAN. What would you place that period at?

Mr. BECKER. I should say that was eight or nine months.

The CHAIRMAN. Eight or nine months, then it gets rancid?

Mr. BECKER. Yes, sir.

The CHAIRMAN. How about veal; how long is veal kept in storage?

Mr. BECKER. That is a detail that I wouldn't be so well informed on; I do not know that I would be qualified to answer that. I have seen veal in storage for long periods of time—I think as long as two or three months—that looked good; it is sound and healthful food, if it is properly stored, for four or five months.

The CHAIRMAN. Then after that what change takes place?

Mr. BECKER. Well, that is a chemical question; I couldn't answer that intelligently. The breaking down of the tissue would, I suppose, be the chemist's answer to that.

The CHAIRMAN. How about sheep; do they keep better than veal?

Mr. BECKER. Yes, sir.

The CHAIRMAN. As well as beef?

Mr. BECKER. Yes, sir.

The CHAIRMAN. About the same?

Mr. BECKER. I should say so.

The CHAIRMAN. Have you stated the quantity of beef on storage at any particular time?

Mr. BECKER. Yes, sir.

The CHAIRMAN. You have?

Mr. BECKER. Yes, sir.

The CHAIRMAN. About what quantity of beef is on storage at particular times?

Mr. BECKER. Now, Senator, I am an engineer and I haven't any memory for statistics.

The CHAIRMAN. Have you got it in this paper, for instance [indicating]?

Mr. BECKER. Yes, sir.

The CHAIRMAN. You may use that to testify from.

Mr. BECKER. A man who figures and writes everything down has never accumulated a memory for any such thing.

The CHAIRMAN. Just use that as a memorandum to testify from [handing witness the paper].

Mr. BECKER. Yes, sir.

The CHAIRMAN. Have you anywhere in your memorandum the number of carcasses?

Mr. BECKER. No, sir; this more especially refers to the cold-storage business as a business than to the packing industry. They are distinct entirely. I do not think, Senator, I have that here. I know I haven't.

The CHAIRMAN. You have no estimate on the quantity of meats?

Mr. BECKER. Not on the packing-house end of it.

The CHAIRMAN. Well, have you on the other?

Mr. BECKER. Yes, sir; we have butter statistics and egg statistics.

The CHAIRMAN. Give us beef as you have it.

Mr. BECKER. That is a negligible amount—the beef that goes into cold storage as cold-storage produce.

The CHAIRMAN. You ship it to your branches. Well, can you tell us about how much you carry in the branches and in the home storage?

Mr. BECKER. The packers know that better than we do. We could only approximate it.

The CHAIRMAN. Is there anyone here representing the packers that will know that? They don't intend to give that, do they?

Mr. BROWNELL. Not that anybody has ever observed.

The CHAIRMAN. Now, is there any objection to dating the meat when it is killed and when it is placed in cold storage and when it comes out?

Mr. BECKER. I don't know what position the packers would take on that.

The CHAIRMAN. What do you think about that?

Mr. BECKER. I should say no. I should also say that it is unnecessary, because to the expert who buys the stuff—the retailer—the appearance is evidence of how long it has been stored. After all, that is the criterion; is it sound? No matter how long it has been stored, if I am a retailer that is the first thing that I will look into. He is not deceived; but as to the customer, as to the purchaser from the retailer, there is the man to protect; that is the man who should know.

The CHAIRMAN. That is the man that we are inquiring on behalf of. We are not inquiring on behalf of the dealer at any stage, but of the ultimate consumer.

Mr. BECKER. If you take my judgment, I should say that is the man to protect, and the only way to protect him is to protect him when he is buying it, by inspection on the retailer's stand.

The CHAIRMAN. That would be all right if every man bought his own meat, but a very large percentage of the meat, at least a considerable percentage of it, is purchased by housekeepers and those who haven't basic intelligence or experience to enable them to apply that test.

Mr. BECKER. All the more reason why an expert inspector should test it for them there where they buy it.

The CHAIRMAN. Well, there is no real objection, so far as you know, to having it tagged?

Mr. BECKER. No, sir.

The CHAIRMAN. Showing the date of the killing and the storage?

Mr. BECKER. Not on meats.

The CHAIRMAN. Now, you have knowledge of both the custom storage and the storage by the owner, have you?

Mr. BECKER. In a general way.

The CHAIRMAN. About what percentage of beef is held in cold storage by the owners in their own cold-storage plants?

Mr. BECKER. For cold storage?

The CHAIRMAN. In their own cold-storage plants—their branches?

Mr. BECKER. All of it, practically.

The CHAIRMAN. You do not pay for storing; you have your own storage houses?

Mr. BECKER. The packers?

The CHAIRMAN. Yes.

Mr. BECKER. Yes.

The CHAIRMAN. So that the testimony of the estimate as to meats held in refrigeration by custom refrigerators for hire is a comparatively small proportion of the meat?

Mr. BECKER. Not over 1 or 2 or 3 per cent.

The CHAIRMAN. Not over 1 or 2 or 3 per cent of the meat killed?

Mr. BECKER. I think not; that is, of the beef and pork and lambs; I do not think it is over 1 or 2 or 3 per cent.

The CHAIRMAN. Held by the men who store it for hire?

Mr. BECKER. Yes, sir.

The CHAIRMAN. You think that 95 per cent or upward is held in storage by the packers themselves?

Mr. BECKER. Yes, sir.

The CHAIRMAN. And you can not give an estimate on the quantities?

Mr. BECKER. No; not without investigation.

The CHAIRMAN. What?

Mr. BECKER. Not without an investigation with the packers themselves.

The CHAIRMAN. Well, where is that information to be found?

Mr. BECKER. I should judge that could be gotten of the packers.

The CHAIRMAN. Individually, or have they an association that could give it?

Mr. BECKER. That I have no knowledge of.

The CHAIRMAN. Who is the largest packer of that kind; that is, that holds their own meat?

Mr. BECKER. Swift and Armour.

The CHAIRMAN. Where is the head house of Swift?

Mr. BECKER. Chicago, Union Stock Yards.

The CHAIRMAN. Who is the executive officer of that company that would know?

Mr. BECKER. Louis Swift.

The CHAIRMAN. And the Armours?

Mr. BECKER. Ogden Armour.

The CHAIRMAN. Now, those men would probably know the quantities of meat held, not only in Chicago but in their branch houses?

Mr. BECKER. Yes, sir.

The CHAIRMAN. At any time?

Mr. BECKER. At all times. They must have it before them to know their business.

The CHAIRMAN. There is no publication that contains it, is there?

Mr. BECKER. I do not know but the Price Currents do. If there is, that is where it could be gotten—by the Price Current, if it is published.

The CHAIRMAN. Now, does your contact with this business enable you to see the meat products in storage from time to time?

Mr. BECKER. Yes, sir; I have watched its improvement since it became a business.

The CHAIRMAN. Much depends upon the condition in which it is at the time it goes in storage, I suppose?

Mr. BECKER. Primarily, meat that is in good, sound condition when it goes into storage, and if it goes into storage in properly refrigerated rooms, rooms that are dry and uniform in temperature, and that have a good circulation, those are the necessary qualifications for excellency when the meat comes out.

The CHAIRMAN. Well, what period do you place on what you call small meats—veal and pork and sheep, as to the time when they begin to deteriorate?

Mr. BECKER. I should say that deterioration in appearance begins in about six or eight weeks.

The CHAIRMAN. Six or eight weeks?

Mr. BECKER. Yes, sir; that is a check on the business itself; the best check I can think of.

The CHAIRMAN. Then at that time, when it begins to deteriorate, in six or eight weeks, what is done with it, or does it remain in cold storage?

Mr. BECKER. I suppose it is sold then to prevent further deterioration—deterioration in the selling value, not in the quality, not in the nutritive qualities. It will remain just as nutritive and just as healthful for a long period of time after that.

The CHAIRMAN. How long?

Mr. BECKER. Oh, for several months; five or six months.

The CHAIRMAN. You think it begins to deteriorate in nutritive quality about five or six months after cold storage?

Mr. BECKER. Yes, sir.

The CHAIRMAN. And it begins to deteriorate in appearance about three or four weeks?

Mr. BECKER. Five or six or seven weeks, according to the quality of the meat and the condition of the room in which it is held.

The CHAIRMAN. Now, as to deterioration of meat after it is frozen in cold storage, tell us what you think about that; about what time it begins to become—rather to deteriorate as to nutriment and as to healthfulness.

Mr. BECKER. You are referring now to packers?

The CHAIRMAN. Yes, sir.

Mr. BECKER. I do not know much about that.

The CHAIRMAN. What is your observation?

Mr. BECKER. As to the time when it begins to deteriorate in nutrition, in nutritive qualities?

The CHAIRMAN. Yes, sir.

Mr. BECKER. Well, from an engineer's view point, I should say it would be a long period of time; I should say that the meat, the tissue, doesn't break down for months, and possibly a year, and possibly, if the room is an exceptionally good one, it would be several years before the tissue would break down, when it would lose its nutritive qualities.

The CHAIRMAN. What would the average be?

Mr. BECKER. I should say eight or nine months.

The CHAIRMAN. Then it begins to deteriorate from a nutritive standpoint and healthfulness?

Mr. BECKER. No. I do not think it would be unhealthful, but it wouldn't be so nutritious; it would be necessary to eat a greater quantity of it to get the same benefit.

The CHAIRMAN. Now, what per cent would you place that at?

Mr. BECKER. I am an engineer.

The CHAIRMAN. I would rather have testimony from observation than a technical analysis.

Mr. BECKER. I should say that the chemical people with the Department of Agriculture, who have made chemical analysis of those things, would be the better people to give you this information.

The CHAIRMAN. Than to take your judgment on the appearance of it?

Mr. BECKER. Yes, sir; I think Mr. Pennington and the chemists connected with the United States Department of Agriculture are the very best judges of that.

The CHAIRMAN. Well, have they access to this meat held in cold storage by the packing houses?

Mr. BECKER. Oh, yes.

The CHAIRMAN. At what periods—any time?

Mr. BECKER. I should say at any time.

The CHAIRMAN. Well, do they inspect it more than once?

Mr. BECKER. I suppose they inspect it frequently; they must, in their own defense.

Senator SMITH. Is the witness's testimony now in regard to fresh meats?

The CHAIRMAN. Yes; he has had many years' experience in connection with the temperature and the icing and keeping of this meat.

Mr. BECKER. Not with special reference to the keeping of the meat, as I am in no way interested in the meat.

The CHAIRMAN. What do you do?

Mr. BECKER. I observe it as to its results in the interest and the art of refrigeration for the purpose of enabling us to perfect the machinery and the mechanism and the circulation in the rooms, so that the packers may get better results.

The CHAIRMAN. Now, do you visit those branch storage houses, your branches?

Mr. BECKER. I have visited a number of them; I have installed refrigerating plants in a number of them and have observed the effect of their operation.

The CHAIRMAN. Is that true of the one in Washington?

Mr. BECKER. I was here in Washington in the years 1898 and 1899 installing an ice plant for Senator Chandler and Mr. Kerr and Roy Williams, who were interested in the Center Market here, and I frequently went to the Center Market and saw the conditions there.

The CHAIRMAN. Since that time or about that time?

Mr. BECKER. About that time.

The CHAIRMAN. Now, how about the Armour packers here in the Center Market?

Mr. BECKER. I do not know about that specifically.

The CHAIRMAN. You never examined that?

Mr. BECKER. I wouldn't say whether it was Armour's or Swift's; I went through the market.

The CHAIRMAN. You will find in this Center Market here a large sign "Armour Packing Company," or whatever it is, and their refrigerators right in this corner of the Center Market. You have not visited that at all?

Mr. BECKER. I have, but the sign did not have any special significance to me; it was the condition of the meat in there with reference to what effect our machinery would have on it.

The CHAIRMAN. Now, do you represent the machinery that is used in refrigeration or the refrigerating company?

Mr. BECKER. The machinery and the buildings, the construction of the buildings and the insulation of the rooms and the economy with which the work can be done.

The CHAIRMAN. Now, whom do you represent?

Mr. BECKER. No one.

The CHAIRMAN. You charge for your services?

Mr. BECKER. Yes, sir.

The CHAIRMAN. Now, have you observed refrigeration as to its effect on fowls—poultry?

Mr. BECKER. Yes, sir; somewhat.

The CHAIRMAN. Tell us about that; tell us about how long poultry remains in good condition in refrigeration.

Mr. BECKER. I should refer you to the Department of Agriculture.

The CHAIRMAN. You didn't observe it for the purpose of determining that, did you?

Mr. BECKER. No; except that its apparent condition is good, to determine whether the circulation in the room is right to make the meat look right and keep it uniform in temperature, and in that way

I have observed that poultry can be kept for very long periods of time.

The CHAIRMAN. How long?

Mr. BECKER. Oh, a year; a year and a half.

The CHAIRMAN. Without deterioration?

Mr. BECKER. Without deterioration at all.

The CHAIRMAN. How about fish?

Mr. BECKER. Fish is not so easily kept.

The CHAIRMAN. About how long can fish be kept without deterioration?

Mr. BECKER. I have seen fish kept a year that was good food; for my own purposes I shouldn't store fish over five or six months.

Senator SMITH. Mr. Chairman, he mentioned a moment ago about the condition of the refrigerating room; what do you mean by condition?

Mr. BECKER. As to cleanliness and as to the presence of micro-organisms in it; as to the condition of the walls, whether they were dry or covered with micro-organisms that were contagious, likely to contaminate meat; that the rooms are clean, kept sweet.

Senator SMITH. Do you think that the condition, the physical condition, of the room in reference to these micro-organisms and the uncleanliness of it, even in the presence of the proper temperature, proper circulation, would have a tendency to affect the meats that were stored in that room?

Mr. BECKER. Yes, sir.

Senator SMITH. Did you find any great per cent of those that you visited in an uncleanly condition?

Mr. BECKER. No.

Senator SMITH. Most of them were sanitary from your standpoint?

Mr. BECKER. Most of them were sanitary from an engineering view point, and it is necessary that they should be; it is to the interest of the packer or the cold-storage man; it requires that they shall be. I should imagine that the best judge of the necessity of the thing is the man whose money is in it and who has got to get it out.

The CHAIRMAN. You merely act in the capacity of a representative of the storage company, to see that their methods of storage are sanitary, and have nothing to do with an examination of the meats kept in storage at all?

Mr. BECKER. No, sir; I am an engineer; my business is to install and instruct the packers and their men in the operation of a plant of that character, and to furnish them with the result of my experience and my study.

The CHAIRMAN. What percentage of the branch storage plants of the packers do you visit in a year?

Mr. BECKER. A very small per cent.

The CHAIRMAN. Very small?

Mr. BECKER. Yes, sir.

The CHAIRMAN. Who does inspect those branches?

Mr. BECKER. The Department of Agriculture.

The CHAIRMAN. Does anybody on behalf of the home company in Chicago?

Mr. BECKER. I should say that the superintendent of the packing company would make regular trips around; he should.

The CHAIRMAN. You know nothing about quantities at all?

Mr. BECKER. Except from the statistics we have compiled.

The CHAIRMAN. Which are in this statement?

Mr. BECKER. Yes, sir.

The CHAIRMAN. Do you desire to ask any further questions?

Senator SMITH. I wanted to bring out if you know anything about the storage of eggs, any special experience as to their deterioration, the length of time that they can be kept wholesome and pure.

Mr. BECKER. We have Mr. Brownell, who is an egg-storage man, egg and poultry storage man in Ohio, who has exact knowledge on the subject, and I should say that he would be better qualified to give that information.

The CHAIRMAN. We will excuse you, then, and call Mr. Brownell.

STATEMENT OF C. H. BROWNELL, OF WASHINGTON COURT HOUSE, OHIO.

The CHAIRMAN. Will you please give your name to the stenographer?

Mr. BROWNELL. C. H. Brownell.

The CHAIRMAN. Where do you reside?

Mr. BROWNELL. Washington Court House, Ohio.

The CHAIRMAN. What is your position?

Mr. BROWNELL. I am a member of the Brownell Cold Storage Warehouse Company, and C. H. Brownell & Sons, shippers. I am also a member of the American Warehousemen's Association and the American Association of Refrigeration.

The CHAIRMAN. Now, what relation have you to the packers?

Mr. BROWNELL. The beef packers?

The CHAIRMAN. Yes; the 95 per cent that has been referred to by the former witness.

Mr. BROWNELL. The big packers—we have no relation whatever to the big packers.

The CHAIRMAN. Your relation is packers for hire?

Mr. BROWNELL. We conduct a poultry and egg packing plant that our father established about fifty years ago, and operate it in a small way in a small county, and maintain a cold-storage house to properly prepare and handle our own products, as well as for hire.

The CHAIRMAN. Have you branches?

Mr. BROWNELL. Yes, sir.

The CHAIRMAN. Where?

Mr. BROWNELL. We have a branch in Columbus, Ohio, and we are opening up a branch in the East.

The CHAIRMAN. Where?

Mr. BROWNELL. We will have a branch in the East in a short time.

The CHAIRMAN. Now, you pack meat—that is, you hold meat in storage—beef?

Mr. BROWNELL. No; it is practically impossible for anybody to handle beef except they belong to the "Big Four," or the packers, whatever you call them.

The CHAIRMAN. Do you know anything of the quantities that those packers carry?

Mr. BROWNELL. I rather think, Senator, that it will be impossible to get that information from anybody except the packers. There is an exceedingly small percentage of that that finds its way into the

public warehouses, and anything that goes to the stock yards, as far as the public is concerned, is absolutely lost, if it appears again.

The CHAIRMAN. Now, you carry the small meats, such as veal and pork and mutton?

Mr. BROWNELL. We kill veals, and kill some hogs at times when we can.

The CHAIRMAN. In what quantities?

Mr. BROWNELL. Very small.

The CHAIRMAN. Well, what do you call small?

Mr. BROWNELL. Well, we kill the veal from our own immediate territory, and that will not exceed seven or eight hundred head a year.

The CHAIRMAN. Do you kill pigs?

Mr. BROWNELL. At times we are able to kill pigs; there are other times when we are not.

The CHAIRMAN. Any considerable quantity of them?

Mr. BROWNELL. We have killed them in carload lots for short periods only.

The CHAIRMAN. Do you carry them in cold storage?

Mr. BROWNELL. No.

The CHAIRMAN. Now, you handle poultry?

Mr. BROWNELL. Yes; poultry and eggs are our main business.

The CHAIRMAN. Tell us about how much poultry you kill and carry.

Mr. BROWNELL. We handle about—of poultry and eggs together, we handle between six and seven hundred thousand dollars' worth a year.

The CHAIRMAN. Do you kill the poultry or buy it from the killers?

Mr. BROWNELL. We kill it.

The CHAIRMAN. All of it?

Mr. BROWNELL. All of it.

The CHAIRMAN. All that you pack?

Mr. BROWNELL. All that we pack.

The CHAIRMAN. Now, how long do you keep it after killing it?

Mr. BROWNELL. A very large percentage of it is killed one day, placed in the cooling rooms, the animal heat removed, packed the next day and placed in the chill room, and loaded in the car the same day—a large percentage of it.

The CHAIRMAN. Where does it go?

Mr. BROWNELL. It goes to the general New York district.

The CHAIRMAN. Does it go to other packing houses?

Mr. BROWNELL. No; it goes to commission men in the general New York district.

The CHAIRMAN. How long do you carry any of it in cold storage, and I mean by that in the chilling rooms?

Mr. BROWNELL. Why, the average—our average holding is probably about three or four months.

The CHAIRMAN. You sell to the commission merchants?

Mr. BROWNELL. We sell to either the commission merchants or the jobbers.

The CHAIRMAN. Have you knowledge as to where the jobbers place it for keeping?

Mr. BROWNELL. The frozen poultry, you mean?

The CHAIRMAN. Yes.

Mr. BROWNELL. They place it in public cold storage or private boxes at the point of distribution.

The CHAIRMAN. Over about what territory are those points?

Mr. BROWNELL. Well, now, you mean to confine that to our business?

The CHAIRMAN. Yes; that you ship.

Mr. BROWNELL. New York, and Newark, N. J.

The CHAIRMAN. Newark, N. J.?

Mr. BROWNELL. Yes; and New York, which I characterize as the New York district.

The CHAIRMAN. You ship poultry to the New York district, to other cold-storage places; that is, it goes into cold storage there?

Mr. BROWNELL. A portion of it, yes, sir.

The CHAIRMAN. Before sending it there you carry it, say, five or six months?

Mr. BROWNELL. I would say our time would average nearer three or four months.

The CHAIRMAN. Average three or four months, and passing from your cold storage to the New York district it is in refrigerator cars, is it?

Mr. BROWNELL. Yes, sir.

The CHAIRMAN. Always?

Mr. BROWNELL. Always.

The CHAIRMAN. And it goes directly from those cars into other refrigerator places?

Mr. BROWNELL. Either into private refrigerator boxes or public cold storage.

The CHAIRMAN. Does it remain frozen during all that time?

Mr. BROWNELL. Yes, sir.

The CHAIRMAN. Doesn't thaw at all?

Mr. BROWNELL. No.

The CHAIRMAN. How about eggs; do you handle eggs?

Mr. BROWNELL. Yes, sir.

The CHAIRMAN. What quantities?

Mr. BROWNELL. Oh, I judge, eggs are about half of our business.

The CHAIRMAN. Can you give approximately the number of cases of eggs that you handle?

Mr. BROWNELL. I could give it nearer in dollars and cents; approximately, from $300,000 to $350,000 worth.

The CHAIRMAN. Where do you get those eggs?

Mr. BROWNELL. From our own immediate territory; probably within a radius of 20 miles, a large percentage.

The CHAIRMAN. Do you know about how long they have been produced before you receive them, as a rule?

Mr. BROWNELL. That is a very difficult question for one to answer. A number of years ago, between eleven and twelve years ago, we attempted to do, in a small way, exactly what you folks are attempting to do now. We attempted to keep the products from our district so that we could put a better quality of both poultry and eggs on the market, and in order to do that we adopted a system of grading, and we buy our eggs, either direct from the farmers or the peddlers who come in direct contact with the farmers, on a grade basis, and that basis does not take into account the length of time the eggs have been laid at all, because we found it impracticable to

do so. We judge it entirely by the appearance of the egg at the time we receive it. If it appears to be full and fresh and sweet and good, why, it is A1, or A grade, as we call it. If it appears to be slightly shrunken, or not quite so fresh as the finest, we call it a B grade, and if it appears to be stale or in other ways damaged, we call it a C grade, and pay different prices for the different grades.

The CHAIRMAN. Now, what happens to an egg to transform it from an A to a C grade?

Mr. BROWNELL. I can answer that better in the terms of the Agricultural Department. They say it is the change of the water from the white to the yellow; that the main difference between a good and a bad egg is the proportion of water that is in the yellow; from a commercial standpoint, the change is shown by shrinkage in the white, and by a cloudy appearance assumed by the yellow.

The CHAIRMAN. How do you detect it?

Mr. BROWNELL. By candling.

The CHAIRMAN. Do you candle all of your eggs?

Mr. BROWNELL. Yes, sir; except a very short time in April.

The CHAIRMAN. Now, after you have received those eggs, what do you do with them first?

Mr. BROWNELL. We make out a packer's report sheet and give them to our customers, packers, candlers, and so forth, and they take and grade them. Then those eggs, a large percentage of them, are placed immediately in refrigerator cars and shipped to the distributing market.

The CHAIRMAN. That is the New York district?

Mr. BROWNELL. Yes, sir; New York districts—the eastern districts.

The CHAIRMAN. You ship them either to——

Mr. BROWNELL. Jobbers or commission men. During the early spring we have to store a percentage because we can not dispose of them.

The CHAIRMAN. How long do you store?

Mr. BROWNELL. I think that varies, of course, according to the condition of the market; we have this year about 10,000 cases.

The CHAIRMAN. During about what month or period of months do you store those spring eggs?

Mr. BROWNELL. The spring storage season is the latter part of March, April, and May.

Senator SMITH. When do you have your greatest supply?

Mr. BROWNELL. That varies in time from the latter part of March to the middle of April.

Senator SMITH. Then your time of greatest demand is when?

Mr. BROWNELL. The time of greatest demand—well, that is the time of heaviest consumption. The heaviest consumption is at the time of heaviest production.

Senator SMITH. And that is along about the holidays?

Mr. BROWNELL. Easter time is really—the American Easter and the Jewish Easter are the heaviest consuming periods.

Senator SMITH. Do you find that the heaviest production is along in the spring?

Mr. BROWNELL. I say any time from the latter part of March until the middle of May. You can not tell when the heaviest receipts will be until the season is through.

Senator SMITH. Along in that period?

Mr. BROWNELL. Yes, sir.

Senator SMITH. Do you not find that along during the winter months, say the holidays, around Thanskgiving time and during Christmas, another season of great demand, scarcity causing the demand?

Mr. BROWNELL. Yes, sir, that is when the demand for cold-storage eggs begins.

Senator SMITH. That is, I think, what the chairman is trying to bring out.

Mr. BROWNELL. The greatest demand for the cold-storage egg is during November and December.

The CHAIRMAN. Those are the eggs that you have collected during the spring months?

Mr. BROWNELL. Those are the eggs that we have collected during the spring months, yes, sir.

The CHAIRMAN. You think they go into the market along in the fall?

Mr. BROWNELL. Generally speaking, yes; if possible they are put on the market at that time.

The CHAIRMAN. Is it a fact that a considerable percentage of those eggs are, nevertheless, carried over into the late winter months?

Mr. BROWNELL. I think, Senator—well, in fact, I know it is the invariable rule of every man who has made a success in eggs—it is his rule to get rid of his eggs before the 1st of January, if possible. After that the storage egg is looked upon as a pure gamble. It then ceases to be a business proposition. Up to the 1st of January it is a plain merchandise proposition. From then on until eggs start in the spring, whenever that may be, it is the purest kind of a gamble.

The CHAIRMAN. When do eggs begin to deteriorate in quality?

Mr. BROWNELL. I do not think the average man can tell any difference in a storage egg up until the middle or latter part of November. During that period, and December, a careful man can tell whether he is eating a storage egg or a fresh egg, generally, although not always. In December, anybody can tell.

The CHAIRMAN. In December?

Mr. BROWNELL. Yes, sir; during January, February, and March, while not unfit for food, but you can tell, the same as you can tell an apple. An apple loses its flavor along in the spring; it is still eatable, however.

The CHAIRMAN. Now, you are an officer of the storage association; what is that called?

Mr. BROWNELL. No; I am not an officer; I am a member.

The CHAIRMAN. You are a member of it?

Mr. BROWNELL. I am a member of the American Warehousemen's Association, and also of the American Association of Refrigeration.

The CHAIRMAN. Now, can you give us figures as to the quantities in storage by members of the association; that is, by concerns that are members of it?

Mr. BROWNELL. Why, Mr. Read has that.

The CHAIRMAN. Is Mr. Read present?

Mr. BROWNELL. No; Mr. Albert M. Read, who has been before the committee; he is the secretary of the association, and has all of those figures in charge. Of course, we have got them.

The CHAIRMAN. He has already appeared before us?

Mr. BROWNELL. Yes, sir.

The CHAIRMAN. Now, have you any knowledge as to the quantities of meats that are stored in storage establishments for hire?

Mr. BROWNELL. Why, I would answer that question by simply saying that the quantity is negligible; it is the overflow from the beef packers with storage houses.

The CHAIRMAN. Now, you handle large quantities of poultry?

Senator SMITH. I would like to ask just one question, Mr. Chairman. Do you notice whether in your storage of eggs that their proximity to other articles causes them to absorb from them certain tastes that affect their sale?

Mr. BROWNELL. There is no question but what their proximity to any article that has either an odor or taste affects their flavor, and it affects it more or less according to the perfection of the ventilating system in the particular cold-storage house. The cold-storage house that is ventilated by an overhead bunker, and the open-brine sewer, will not absorb those flavors and the odors, and the eggs will not take them up nearly so rapidly as they will in houses that are piped with the old-fashioned, or the older method, rather, of either brine or direct extension, without a circulating air system.

Senator SMITH. Doctor Wiley testified before us that the taste of an article entered into its healthfulness in that it promoted or depressed digestion, you remember, Mr. Chairman?

The CHAIRMAN. Yes.

Senator SMITH. And I have detected distinct flavors in a cold-storage egg which I recognized, and I wanted to know whether or not you had any knowledge of where the taste and flavor of the egg, when it was in perfect condition, about what time it could be kept, as to taste and flavor and healthfulness and nutrition—how long it could be kept in perfect condition?

Mr. BROWNELL. I think I answered that question. A commercial April egg, kept in a commercially perfect house, would be so good up until November that the average expert would be unable to determine whether it was a storage egg or a fresh egg. After that, it begins to develop flavors that an expert can detect, and those flavors become more and more marked until possibly a year.

The CHAIRMAN. Until we get them on the average hotel table?

Mr. BROWNELL. I do not think you get a great many eggs on the average hotel table a year old. You get some very bad ones.

Senator SMITH. Mr. Chairman, I would like to ask one question that I think would be of interest along this line. You grade them in A, B, and C when they come in. When you sell them, do you sell them in those same grades?

Mr. BROWNELL. That is the only guaranty we give our customers. We guarantee our customers that the grade we buy them for, we will sell at the same grade. We can not guarantee them that we will have absolutely ever A egg in the A grade, or every B egg in the B grade, but we do guarantee them that they will be bought and sold on the same grading.

Senator SMITH. Have you any knowledge that when those eggs, for instance, you get A, B, and C; a C egg now there is beginning to be a breakdown of the tissue?

Mr. BROWNELL. Well, you would have to include a fourth grade.

Senator SMITH. You classify them and grade them according to their state, when received?

Mr. BROWNELL. Yes, sir.

Senator SMITH. You then ship them to your customers?

Mr. BROWNELL. Yes, sir.

The CHAIRMAN. So you make a shipment of all those grades?

Mr. BROWNELL. Yes, sir.

Senator SMITH. Have you any knowledge that when they get to the points of distribution, the retailer when he is selling them—whether he sells them under the same grade?

Mr. BROWNELL. No, he does not; those eggs will find their way to different markets; that is, different retail markets. There are some men that are willing to pay a price for a fancy egg, and those men will buy very largely the A grade. There are other men that don't care quite so much for style and appearance; they want a good serviceable egg, every one of which is good enough to be served upon one's table. They will buy the B or second-grade egg. Of course, you understand our A, B, and C are arbitrary names adopted by ourselves. And a third-grade egg will find its way to baker's trade, that want a good egg, but do not care for the fresh flavors and the palatable taste that Doctor Wiley speaks of. The fourth grade of eggs, which we make—they are the rotten eggs that are not fit for market; those eggs we pay nothing for.

The CHAIRMAN. What do you do with them?

Mr. BROWNELL. Since the Government has become active we have to destroy them. Previous to that time we sold them.

The CHAIRMAN. Well, it occurred to me you wouldn't say or be understood as saying that a B egg would be as good in November as it was in April?

Mr. BROWNELL. Unquestionably not; and there, Senator, is my reason for objecting to any bill that provides for a dating. The dating doesn't signify anything as to quality.

The CHAIRMAN. Are some eggs produced in an inferior condition—rotten?

Mr. BROWNELL. They are not produced in a rotten condition, but in an inferior condition and in an unmarketable or uneatable condition.

The CHAIRMAN. Is that the fault of the hen or the conditions around it?

Mr. BROWNELL. I think the condition of the hen.

The CHAIRMAN. Then all eggs are not sanitary when laid?

Mr. BROWNELL. All eggs are not sanitary or eatable when laid. I have seen eggs with pieces of membrane that looked—almost looked like a piece of liver in them. I have seen other eggs with blood spots in them that would be three-quarters of an inch long, an absolutely fresh-laid egg.

The CHAIRMAN. They are not sanitary, you think?

Mr. BROWNELL. Why, we always consider them unfit for food.

The CHAIRMAN. What class would you put them in?

Mr. BROWNELL. D; the class we pay nothing for. But to return to what I started to say, your question about the D eggs brings out the point that I wanted to make, and that is, that any single time that you might state doesn't guarantee the quality.

The CHAIRMAN. It would serve as a notice, perhaps.

Mr. BROWNELL. No; it wouldn't. I would rather have one of our April A eggs in November that had been stored in a good cold-storage house than to have one of our C eggs that was purchased in October and only stored for a week, and yet on the time-limit basis apparently the C grade egg would be a fresher and more desirable egg than the A grade, because it would carry a week's certificate in storage, and the other would carry eight months'.

The CHAIRMAN. Yes; but that would be a class of egg that never was good?

Mr. BROWNELL. No; that is a class of egg that is still a commercially good egg.

The CHAIRMAN. Well, the word "commercial" is somewhat elastic.

Mr. BROWNELL. Well, chemically good; bacteriologically good. You understand that eggs go down by stages. An egg is good to-day when laid; it is not quite so good to-morrow; it is not quite so good the next day, and so on until it finally becomes a bad egg, if it isn't consumed in the meantime.

The CHAIRMAN. Do you handle butter?

Mr. BROWNELL. Packing-stock butter; yes, sir.

The CHAIRMAN. What do you mean by packing-stock butter?

Mr. BROWNELL. Farmer-made butter.

The CHAIRMAN. Why do you call that packing-stock butter?

Mr. BROWNELL. It is undergrades of farmer-made butter that is used for making renovated butter.

The CHAIRMAN. On the basis of oleomargarine?

Mr. BROWNELL. No.

The CHAIRMAN. What do you mean by renovated butter? Within what scope do you use that term?

Mr. BROWNELL. Well, that is a well-known trade name for a class of butter that is made by taking ordinary dairy butter, melting it, recrystalizing and rechurning.

The CHAIRMAN. And that is renovated butter?

Mr. BROWNELL. Yes, sir.

The CHAIRMAN. Now, is that marked "renovated butter" when sold?

Mr. BROWNELL. There is a law compelling them to do that.

The CHAIRMAN. It comes under that law?

Mr. BROWNELL. Yes, sir.

The CHAIRMAN. And you handle that?

Mr. BROWNELL. We handle the packing stock.

The CHAIRMAN. In what quantities?

Mr. BROWNELL. From 300,000 to 500,000 pounds.

The CHAIRMAN. Is that placed in cold storage?

Mr. BROWNELL. A very large percentage of it.

The CHAIRMAN. Before you would get it?

Mr. BROWNELL. No, sir.

The CHAIRMAN. Afterwards?

Mr. BROWNELL. Yes, sir.

The CHAIRMAN. How long does it remain in cold storage?

Mr. BROWNELL. Usually an average of six months.

The CHAIRMAN. What is the maximum?

Mr. BROWNELL. Well, that would be a difficult question to answer.

The CHAIRMAN. How long have you known any of it to remain in cold storage?

Mr. BROWNELL. In our own houses not over a year.

The CHAIRMAN. Have you known it in other houses to remain for longer than that?

Mr. BROWNELL. Yes, sir; more than a year.

The CHAIRMAN. You have known it to remain more than a year?

Mr. BROWNELL. Yes, sir; but that is not commercially good practice.

The CHAIRMAN. Now, at the end of seven months, do you send that to other cold-storage houses?

Mr. BROWNELL. No; that is sent to the renovating factory.

The CHAIRMAN. Do you carry that cold storage until you sell it to the renovating factory?

Mr. BROWNELL. Yes, sir.

The CHAIRMAN. You carry it as the farmer sends it in?

Mr. BROWNELL. Yes, sir.

The CHAIRMAN. And then it is renovated. Do you know anything about the length of time it remains in cold storage after that?

Mr. BROWNELL. My understanding is that it is marketed as soon as possible after being renovated. It is never better than immediately after churning, although it occasionally is kept longer.

The CHAIRMAN. You freeze it, do you?

Mr. BROWNELL. Yes, sir.

The CHAIRMAN. Within what time after you receive it?

Mr. BROWNELL. Put it immediately into the freezers.

The CHAIRMAN. You no not know how long it has been subjected to atmospheric conditions before you receive it?

Mr. BROWNELL. We have no way of knowing.

The CHAIRMAN. Buy it through what class of merchants?

Mr. BROWNELL. Peddlers and retail country merchants.

The CHAIRMAN. Do you take the left-over of the market of the farmer's butter?

Mr. BROWNELL. From the retail stores; yes, sir.

The CHAIRMAN. And from the farmers, where they stand in market?

Mr. BROWNELL. We have no farmers' market in our neighborhood.

The CHAIRMAN. Do you take the left-over from the stores?

Mr. BROWNELL. Yes, sir.

The CHAIRMAN. The stores hold on, perhaps, as long as they can in its original condition, and then send it to you to be stored, and by you sent to the renovating establishments, which covers a time of seven or eight months from the production?

Mr. BROWNELL. Not to exceed that.

The CHAIRMAN. Now, is that butter kept in a locked-up condition?

Mr. BROWNELL. Yes, sir.

The CHAIRMAN. It has no opportunity to absorb odors or atmospheric conditions from anything else?

Mr. BROWNELL. No, sir; tight packages.

The CHAIRMAN. That will be all.

Mr. BROWNELL. I would like—I would rather like to emphasize that statement that I made, Senator, that I think that any time limit that can be placed on cold-storage products legally is unde-

sirable, and I think it is undesirable from this standpoint: As I understand your position, you folks are striving to get the very best possible product for the consumer.

The CHAIRMAN. Yes; to the legitimate consumer.

Mr. BROWNELL. Yes; at the very cheapest price.

The CHAIRMAN. We are not dealing with prices in this committee. That is another committee.

Mr. BROWNELL. Well, we can strike that out; that you are naturally trying to get the best possible product that you can. Now, as it appears to me, time is the least important of all the elements that enter into good quality in warehouse products, and, being the least important of all the elements, it certainly should not be the one element that is emphasized in your law.

The CHAIRMAN. I would say this: The result of time, not the time, but the result that time has on those things, is the important question into which we are inquiring.

Mr. BROWNELL. Well, I think you will find that the previous condition that the product has been subjected to before getting into the cold-storage plant is the determining factor, and there is one thing that I would warn you against, and that is this: That any law that you might pass certainly don't want to discourage the establishment of precooling stations. Your department is now—that is, the Agricultural Department, which is a part of the Government—is now bending every effort to educate the western producers, large handlers of goods, to install precooling plants. Well, it seems to me that if you undertake to put a time limit on that you will stand in the way of the installation of these plants, because it will make it so that a man that kills and packs his stuff without refrigeration and without proper methods will apparently, in the eyes of the law, be putting a fresh or better product on the market than the man who is properly equipped.

The CHAIRMAN. We are considering seriously the question as to the advisability of establishing a time limit, and also the conditions under which certain limits should be established. A uniform limit would probably not work, but we have to start with something as a basis, and we are gathering information as to the effect that time has upon those various commodities in order that we may intelligently present the matter in the shape of legislation.

Mr. BROWNELL. I think I appreciate that, and, being in touch with the work that your Agricultural Department is doing as closely as I am, and knowing the difficulties of getting a law that can possibly be enacted at the present time, I rather think it would be wise to await the results of their investigation, because if you will enter into the subject deep enough you will find that it is almost a practical impossibility at the present state of knowledge to formulate any law that will not hinder rather than advance your own purposes.

The CHAIRMAN. The agricultural agencies, or the agencies of the Agricultural Department, are the instruments that Congress uses for the purpose of advising it in legislating, and we are having the full benefit of the investigations made by these various branches of the Government, which are all under the control of Congress, and they are the means that Congress has adopted for ascertaining a basis upon which to legislate intelligently. We do not propose to

make this an oppressive measure; we are making this investigation strictly in the interests of the consumer, and want to make it so that it will not in any way interfere with any legitimate business, and yet will tend to insure a clean market to the consumer.

Mr. BROWNELL. You have a very difficult problem.

The CHAIRMAN. We are continually solving difficult problems, and there is no other agency in the Government to solve them, so we will have to do the best we can.

STATEMENT OF MR. W. F. BURROWS, OF CHICAGO, ILL.

The CHAIRMAN. Will you kindly give the reporter your name and residence and business?

Mr. BURROWS. W. F. Burrows. Do you want the street?

The CHAIRMAN. Your address, whatever it is.

Mr. BURROWS. Libby, McNeil & Libby, Chicago.

The CHAIRMAN. You are vice-president and secretary?

Mr. BURROWS. Yes, sir; and manager.

The CHAIRMAN. Libby, McNeil & Libby are engaged in what business?

Mr. BURROWS. Canning beef, particularly.

The CHAIRMAN. Where do they obtain their supply of beef to can?

Mr. BURROWS. Well, from Chicago and St. Louis.

The CHAIRMAN. I mean from what class of producers?

Mr. BURROWS. Mostly from grass cattle. We buy cattle—Swift does our killing for us—we buy cattle in different points and have them shipped to Chicago and then we cut them up there.

The CHAIRMAN. Swift furnishes you all of your beef, doesn't he?

Mr. BURROWS. That is, he does the buying for us.

The CHAIRMAN. Are you an agency of Swift?

Mr. BURROWS. We pay Swift & Co. so much per head for killing our cattle, and they buy them at different points where they have their slaughterhouses.

The CHAIRMAN. And you can them?

Mr. BURROWS. Then the meat is shipped to us and we strip the cattle.

Senator OLIVER. They buy them for your account?

Mr. BURROWS. They buy them for our account; yes. And we pay them so much per head for buying and killing them.

The CHAIRMAN. Then they come to you in the shape of carcasses?

Mr. BURROWS. They come to us in quarters.

The CHAIRMAN. In quarters?

Mr. BURROWS. Yes; that is, outside of Chicago, and in Chicago they come to us in halves.

The CHAIRMAN. Have you more than one establishment?

Mr. BURROWS. Yes; we have one at Fort Worth.

The CHAIRMAN. Any other outside of Chicago?

Mr. BURROWS. No.

The CHAIRMAN. One in Chicago?

Mr. BURROWS. One in Chicago.

The CHAIRMAN. What quantity of beef do you handle in a year?

Mr. BURROWS. Over 308,000 cattle; 320,000 last year.

The CHAIRMAN. Cattle?

Mr. BURROWS. Yes, sir.

The CHAIRMAN. Have you any knowledge of where those cattle are purchased, or do they come out of the general market?

Mr. BURROWS. Well, they come from the different stock yards; they are purchased in Chicago, St. Louis, Omaha, St. Joseph, Fort Worth, and St. Paul; Swift kills at all those points for us.

The CHAIRMAN. How many cattle do the Swifts kill in a year?

Mr. BURROWS. Well, I couldn't answer that; I don't know.

The CHAIRMAN. You know only as to your own purchases?

Mr. BURROWS. Yes, sir.

The CHAIRMAN. You work this meat up into its various by-products?

Mr. BURROWS. Yes; we take the dressed beef that comes to us; they come into packing houses, and we cut them up; we take the loin and the ribs and the rounds out; the rounds we make dried beef of.

The CHAIRMAN. All of that?

Mr. BURROWS. We sell a few, and the chucks and the plates we can—take the bone out and cure them and can them.

The CHAIRMAN. Is that the only product of the beef you can?

Mr. BURROWS. Practically; though some few strippings from loins and the shank we sell.

The CHAIRMAN. Can you state the proportion of a beef that goes into the several classes of commodities?

Mr. BURROWS. Well, I couldn't——

The CHAIRMAN. I didn't know but what you had that figured up.

Mr. BURROWS. No.

The CHAIRMAN. Now, do you carry any of that meat fresh at all?

Mr. BURROWS. No.

The CHAIRMAN. Yours is in the manufactured product when it goes into the market?

Mr. BURROWS. Maybe I had better explain just how we handle it.

The CHAIRMAN. Yes.

Mr. BURROWS. Most of our killing is done in the fall, from the middle of August to the 1st of January. That is when the grass cattle come, and we kill three-quarters of all our cattle in that time. Well, it is impossible to sell all of our cuts—we cut 2,500 cattle a day—it is impossible to sell them; there is no demand for them. On the 1st of January there is a demand for cuts, so we take those cattle in; we buy all the cattle we can—all we can handle during those months—and cut them up and put the cuts into the freezer.

The CHAIRMAN. When you say the freezer, you mean the cooler or cold-storage plant?

Mr. BURROWS. I mean in the freezer, the cold storage. The beef is all properly killed before we cut it, the animal heat is taken out of it and we put those cuts into the freezer, and after the 1st of January we commence to sell them. After the 1st of January to July we handle about 2,500 cattle a week, where in the fall we handle 2,500 cattle a day, and we need those goods to keep our trade supplied with beef.

The CHAIRMAN. And then you can the loins?

Mr. BURROWS. The loins, the ribs, tenderloins, the rolls, and chucks.

The CHAIRMAN. And livers?

Mr. BURROWS. Yes; and hearts and kidneys. We do not handle so many of those as some of the other packers do.

The CHAIRMAN. Now, you have taken those in in the fall?

Mr. BURROWS. Yes, sir.

The CHAIRMAN. And you hold them in cold storage until, say, after the 1st of January?

Mr. BURROWS. Yes, sir.

The CHAIRMAN. Then what do you do with them; what market do you get for them?

Mr. BURROWS. We begin to sell them.

The CHAIRMAN. To whom do you sell them—to the local trade?

Mr. BURROWS. All over the country.

The CHAIRMAN. They go to other cold-storage plants—holding plants?

Mr. BURROWS. They might occasionally; they wouldn't go unless a packer would buy them; he would come to us and buy 50,000 pounds of tenderloin, and we would turn them from our cold-storage plant over to his. We have places in Boston and Washington and Philadelphia that take about so many cuts a week, and are sold; we try, when we get this stuff, to put it into the freezer just as quick as we possibly can; we get the results that way. When it is cut fresh and put into the freezer, when it comes out it is pretty hard for you or me to decide whether it is not a fresh beef. We place it at a low temperature first, and then we try to hold it about 12 above zero, and then we commence to sell it in January and get rid of it.

The CHAIRMAN. Sell it frozen, do you?

Mr. BURROWS. Yes, sir.

The CHAIRMAN. Ship it in carload lots?

Mr. BURROWS. No; not altogether; we ship a good many in boxes to restaurants and hotels; we have a very large hotel trade.

The CHAIRMAN. Now, that that goes in boxes, does it go in refrigerator cars afterwards?

Mr. BURROWS. Yes; except in winter; but in shipping we ship in refrigerator cars, or by express.

The CHAIRMAN. How is it shipped by express?

Mr. BURROWS. When we ship by express it is packed in boxes, and rounds cans which we have, packed around with ice, more like a refrigerator house.

The CHAIRMAN. Now, you begin to ship that in January?

Mr. BURROWS. Just as soon as we are short of beef we commence to sell it.

The CHAIRMAN. How long does that shipment continue after January; you do not sell all at once, do you?

Mr. BURROWS. Oh, no, we sell up to September, and in September we begin to get another supply.

The CHAIRMAN. So that supply is sold out as the market will take it after January until the following September?

Mr. BURROWS. Yes, sir; we might sell it before; we commence to sell as fast as we can.

The CHAIRMAN. If you held it until September, some of it would be about a year in refrigeration?

Mr. BURROWS. Yes, sir.

The CHAIRMAN. What periods?

Mr. BURROWS. Inspected by the Government when it goes in and when it comes out.

The CHAIRMAN. Always when it comes out?

Mr. BURROWS. Yes, sir.

The CHAIRMAN. Is all of your product in cold storage inspected when it comes out?

Mr. BURROWS. The meat is.

The CHAIRMAN. I mean government inspection.

Mr. BURROWS. The inspector doesn't open every box, but I think there are eight or ten inspectors around our place, and they are right on to us all the time if there is anything wrong, and we are glad to have them.

The CHAIRMAN. You have a mark that tells when the meat is killed and placed in cold storage and taken out?

Mr. BURROWS. Yes.

The CHAIRMAN. That is a private mark?

Mr. BURROWS. Not necessarily.

The CHAIRMAN. And that tells when it was killed and went into cold storage and when it came out?

Mr. BURROWS. Tells when it was put into cold storage.

The CHAIRMAN. But not when it was killed?

Mr. BURROWS. No.

The CHAIRMAN. Now, this cooling process occurs at Kansas City and Chicago and Omaha, does it?

Mr. BURROWS. Yes.

The CHAIRMAN. And it comes to you in what shape?

Mr. BURROWS. In quarters.

The CHAIRMAN. Refrigerator cars?

Mr. BURROWS. Refrigerator cars.

The CHAIRMAN. From the killing, shipped immediately when it is killed?

Mr. BURROWS. No; it is cooled for forty-eight hours.

The CHAIRMAN. What temperature are those refrigerator cars?

Mr. BURROWS. Around 35, I should think—35 to 40; we try to keep them 35.

The CHAIRMAN. You take it out of the cars in which it comes in quarters or halves, as it may be, and put them right into your cooling room or freezing room?

Mr. BURROWS. It comes right to the cutting room where we cut it up in pieces, in different parts; then we sell—supply our wholesale market with what meat they can handle; they will want so many loins and so many ribs, and we give out to the market and we sell outside all we can, as fast as we can, and the surplus we put right in the freezer fresh.

The CHAIRMAN. Now, let me deal with that first. You send it right out on the market, as much as they will take?

Mr. BURROWS. Yes, sir.

The CHAIRMAN. And that has not been frozen?

Mr. BURROWS. No, sir.

The CHAIRMAN. It is sold open on the stalls of the dealers; do you deal with those that sell to the consumer?

Mr. BURROWS. Yes, sir.

The CHAIRMAN. How long would it be exposed in the open air?

Mr. BURROWS. Oh, I wouldn't think over an hour or two.

The CHAIRMAN. You think they would sell up that closely?

Mr. BURROWS. Well, the butcher has a box.

The CHAIRMAN. Now, after it has been in the butcher's box in the stall, I suppose that that is left over is brought back to you?

Mr. BURROWS. No.

The CHAIRMAN. Never at all?

Mr. BURROWS. No.

The CHAIRMAN. So you handle only the original product?

Mr. BURROWS. Yes, sir. I am mistaken in that a little. We do buy plates, some.

The CHAIRMAN. For canning?

Mr. BURROWS. For corned beef.

The CHAIRMAN. You make corned beef out of that, do you?

Mr. BURROWS. Yes.

The CHAIRMAN. You buy the left-over of that market for that purpose?

Mr. BURROWS. Yes, sir.

The CHAIRMAN. Do you buy from any others than those to whom you sell?

Mr. BURROWS. It doesn't make any difference so long as the beef is in good condition, and that is inspected by the government inspector when it comes into our house, and we would not buy it unless it has the government mark on it.

The CHAIRMAN. Now, do you mark your goods generally so you can tell the date of the killing?

Mr. BURROWS. No.

The CHAIRMAN. You have nothing to indicate how much time has elapsed between the killing of the meat and going into your cold storage?

Mr. BURROWS. Oh, yes, we can tell that; we know within a day or two; take in Chicago, beef killed to-day would go into cold storage Monday; we would cut it, and we would know, and beef coming from out of the city, we would know how many days it has been on the road.

The CHAIRMAN. Now, do you brand, or rather, do you date the cans in which you put the canned meat?

Mr. BURROWS. No.

The CHAIRMAN. Neither by an open or a secret mark?

Mr. BURROWS. No.

The CHAIRMAN. You keep no account of that—of the date of the can, and that can not be ascertained at all?

Mr. BURROWS. No.

The CHAIRMAN. Now, have you in pursuance of your duties given attention to the condition in which meat will be after kept in cold storage any particular length of time?

Mr. BURROWS. Yes.

The CHAIRMAN. When does meat begin to deteriorate after being kept in cold storage?

Mr. BURROWS. Well, cold storage, or a freezer? Cold storage is what we call a box where we handle our stuff from day to day; that is kept at a temperature of 35 degrees. Our freezer is where we place the meat salted.

The CHAIRMAN. Well, now, take those separately. When would meat begin to deteriorate in your cold-storage boxes as you call them?

Mr. BURROWS. Oh, I should think about a week.

The CHAIRMAN. And what do you do with it then?

Mr. BURROWS. We don't keep it; we will sell it out.

The CHAIRMAN. You never keep meat in those boxes over a week?

Mr. BURROWS. Not unless we hold it for a butcher. A butcher buys loins and ribs and he wants to age it. All the meat that you get in a hotel is aged for a certain length of time.

The CHAIRMAN. In those boxes?

Mr. BURROWS. In their own boxes. Sometimes the packer does that for them.

The CHAIRMAN. How long would you hold it that way?

Mr. BURROWS. Sometimes two or three weeks.

The CHAIRMAN. You said that begins to deteriorate in about a week?

Mr. BURROWS. Well, it isn't what we would call fresh-killed beef.

The CHAIRMAN. The fat gets bad?

Mr. BURROWS. It isn't bad, but you can see it is a little old.

The CHAIRMAN. And rancid?

Mr. BURROWS. No; it isn't rancid, but you could not call it fresh-killed meat.

The CHAIRMAN. That goes to butchers in that way; you hold it for the butchers?

Mr. BURROWS. Yes.

The CHAIRMAN. Until it is at least two weeks past the period when you say it begins to deteriorate?

Mr. BURROWS. Yes, sir.

The CHAIRMAN. And goes to the butcher and goes into his box?

Mr. BURROWS. Well, he has a hotel, probably, that he is curing the meat for.

The CHAIRMAN. Have you ever observed the unpleasant taste of a great deal of the fat on the outside of the roast beef that you get at hotels and elsewhere?

Mr. BURROWS. Yes, sir; I had some coming out on the train last night.

The CHAIRMAN. What is that from?

Mr. BURROWS. The beef is too old.

The CHAIRMAN. That fat has begun to disintegrate and become rancid?

Mr. BURROWS. Yes, sir.

The CHAIRMAN. Have you ever noticed when they were serving you roast beef that they shaved off the outside fat; is that because the outside fat has begun to deteriorate and has arrived to such a condition that it is not fit to eat?

Mr. BURROWS. Yes, sir.

The CHAIRMAN. And you only hold it until it gets to that condition for those that want it in that condition?

Mr. BURROWS. Yes, sir; that is all.

The CHAIRMAN. Is your meat canned before it has reached the first period of deterioration?

Mr. BURROWS. Oh, yes; as soon as we get a canner we put it in cure right away—right in the pickle. We put up some fresh beef; that is canned the next day. But we figure to take care of our meat as fast as we can, as soon as we get it, and we know if we get it into the cans fresh, there is no come back; we do not want to sell you a

can of meat that will not sell another can. That is the way we work our whole establishment.

The CHAIRMAN. Now, what percentage of your product do you think is on hand for the following fall market?

Mr. BURROWS. You mean in the freezer?

The CHAIRMAN. Anywhere.

Mr. BURROWS. Frozen meat, about twelve to thirteen million pounds.

The CHAIRMAN. That is carried over for the fall?

Mr. BURROWS. That is what we have on hand the 1st day of January.

The CHAIRMAN. Fresh meat?

Mr. BURROWS. Frozen meat.

The CHAIRMAN. Frozen meat?

Mr. BURROWS. Yes, sir.

The CHAIRMAN. That you have taken in in the fall months?

Mr. BURROWS. We have taken that in from September until February.

The CHAIRMAN. And in the following September you have about 12,000,000 pounds on hand?

Mr. BURROWS. Oh, no.

The CHAIRMAN. That was the question I meant to ask you.

Mr. BURROWS. On the 1st day of January that is the largest stock we have on hand, because we are practically through getting those grass cattle, and this year it runs from ten to twelve million pounds. In January the cattle commence to slack off and then we commence to draw from our freezer and sell it to our trade.

The CHAIRMAN. Now, you say you keep drying until the following year?

Mr. BURROWS. Until it is sold; sometimes it is all sold out in three months.

The CHAIRMAN. And sometimes not?

Mr. BURROWS. We like to have it closed out before we commence cutting again; we have carried it over for eighteen months.

The CHAIRMAN. You have carried it over for eighteen months?

Mr. BURROWS. Yes.

The CHAIRMAN. And any considerable quantity of it?

Mr. BURROWS. No.

The CHAIRMAN. Well, about how much of the fall's collection of meat would you have on hand, say the first of the following September?

Mr. BURROWS. Well, we wouldn't have over half a million pounds.

The CHAIRMAN. And what do you do with that?

Mr. BURROWS. We sell it as fast as we can; we keep on selling it as fast as we can.

The CHAIRMAN. Do you give preference in selling to the meat you have on hand to work down the old supply?

Mr. BURROWS. Yes, sir.

The CHAIRMAN. Now, do you handle anything else besides beef?

Mr. BURROWS. No.

The CHAIRMAN. Will you reduce that number of pounds there, 12,000,000 pounds, to cattle?

Mr. BURROWS. I will do that in a minute for you; that will take a little time; I have got to figure out the different parts a little. How much to the carcass, you mean?

The CHAIRMAN. Yes; take a fair average.

Mr. BURROWS. Fifty pounds.

The CHAIRMAN. What I meant was, how many cattle would that represent?

Mr. BURROWS. That would be about 250,000 cattle; that is what would be put into the freezer out of 250,000 cattle.

The CHAIRMAN. How many cattle does it take to produce those 12,000,000 pounds; what is the average weight of a cattle?

Mr. BURROWS. About 400 pounds dressed.

The CHAIRMAN. What would be the live weight?

Mr. BURROWS. Well, 750 to 850 pounds.

The CHAIRMAN. Divide that 12,000,000 by 750, and I think you will get what I want.

Mr. BURROWS. You want the live weight; it would be about 15,000,000, with the bones in; this is boneless, of course. At that rate it would be 375,000 cattle; we didn't handle that much; about 320,000 cattle.

The CHAIRMAN. Well, that is deducible from the figures we have.

STATEMENT OF MR. F. G. URNER, OF NEW YORK CITY.

Mr. URNER. I am vice-president New York Mercantile Exchange, vice-president Urner-Barry Company, New York, publishers of New York Produce Review and the Producers' Price-Current.

A long and close acquaintance with the use of cold storage in the preservation of important articles of food, and with the methods of marketing many of the articles commonly carried in cold storage, prompts the following comments upon the general purposes of Senate bill No. 7649, now before you for consideration, claiming expert knowledge of many phases of the subject, derived from my experience as a reporter of produce-market conditions during the past thirty years.

Before discussing the provisions of the bill, I beg to consider briefly the present situation of the cold-storage industry and of food distributors depending upon cold storage for the preservation of their stock in trade, in respect to proposed restrictive legislation in general.

The popular agitation resulting from the high cost of food products and discussion of the cause thereof has led to the conclusion by many leaders of public opinion that the ability to preserve surplus goods in refrigeration is chiefly responsible. Resulting from this conclusion a large number of bills have been introduced in the legislatures of various States, designed to restrict the holding of food products in cold storage, and to compel the branding of goods so held as "cold stored," or with a statement of the time during which they were held in storage. The provisions of these proposed state laws have been various, the limit of permissible storage being placed at different periods, from thirty days to twelve months, and the proposed details of branding requirements are also various and conflicting.

Owing to the national character of food distribution—the widespread sources of supply and points of consumption, the natural movement of goods from many States to central points of storage and thence to many other States for consumption—it is evident that conflicting and irregular restrictions imposed by individual States upon

the cold-storage industry would lead to great confusion and to the destruction of the cold-storage industry in those States where the most stringent restrictions were imposed, their business drifting to other States where there was greater freedom to conduct the business in accordance with natural trade demands.

As yet restrictive state or municipal laws have not been enacted to any considerable extent, but in some States, notably in New Jersey, stringent measures have been pushed far toward enactment, and in New York City a restrictive ordinance was passed by the board of aldermen which failed to become effective only through veto by the mayor.

These measures, carried so far toward enactment in New Jersey and in New York City, had they been enacted, would have practically destroyed the cold-storage industry in that State and city in the absence of similar restrictions at other storage centers.

I make this statement of fact to explain the attitude of the members of the New York Mercantile Exchange and of the public cold-storage interests which I represent. This attitude may be briefly stated as follows:

First. It is held as a result of long experience in the distribution of perishable foods that limitation of the period of permissible cold storage is not necessary to the public welfare, but not objectionable if the limit be fixed as to various articles according to their varying character and rates of deterioration.

Second. That legislation resulting in information of consumers as to the length of time goods have been held in cold storage can not, in principle, be objected to, but that it could only be effected at vast expense and through extremely complicated and difficult police control, which would be out of all proportion to the benefit derived.

Third, that since restrictive legislation should be uniform throughout the country, and since harmful and conflicting state enactments are imminent unless guided and influenced by national legislation, the present senatorial investigation is welcomed as leading to an authoritative indication that legislation is unnecessary, or else to a federal law whose provisions may be sufficiently liberal as to conserve the great utility of cold storage and still to provide such protection to public interests as occasional and exceptional abuses may require.

The purposes of this legislation are twofold—first, to set a limit to the time when food may be held in cold storage, and, second, to compel the labeling af articles so held (or the containing packages) with a statement of the period of time which they were held in cold storage. The only objects of any limitation of the time during which food may be carried in cold storage must be first to prevent or lessen a supposed control of prices, and, second, to prevent carriage until the goods become unwholesome.

In respect to the holding of many important food articles in storage—such as butter, cheese, eggs, and poultry—there is a popular false impression that these articles are controlled by business combinations which, through unanimous agreement or direction of executive control, determine the times when the bulk of the products shall be marketed or withheld from sale with the effect of controlling prices. The fact is that the articles above mentioned are manufactured or collected from producers by thousands of independent and unassociated persons or firms, sold by them to other thousands of independent distributing agencies, and by the latter to other thou-

sands of smaller distributors and retailers, each of whom acts according to his individual judgment as to whether goods bought should be stored or placed in immediate consumption, and whether his goods already stored should be sold at once or carried for later markets. The basis of such action is purely the individual judgment of market conditions, present and prospective, and the effect upon market values is produced by the average policy of thousands of individual operators, buying and selling upon free and open markets.

It must be evident that, concerning perishable food products of seasonable production, or of greatly varying production from season to season, each year's product must, as a general rule, be consumed within the year, or before the recurrence of the next season of maximum production Values are naturally the lowest and qualities best in the season of greatest production; goods carried from one season of maximum production to the next must be sold in competition with fresh goods of the lowest natural value and of greater intrinsic worth because of their freshness. And the cost of carriage, under these circumstances, added to the impaired value of year-old goods, makes a certain loss on such as a general rule. Instances where goods are carried over from one season past the next season of flush production are rare and exceptional, although this course may sometimes be taken with comparatively small quantities in the hope that the next season of scarcity may lessen or obviate the loss.

I respectfully submit that in order to realize any higher price for stored goods than measures their market value when stored, products must be carried to a season when fresh supplies are scarcer Consequently, the fundamental incentive among storers of goods, the production of which is variable, is to market reserve stocks when consumers have greater need of them, this being the only course that can result in profit. It follows, therefore, that the interests of storers compel the marketing of reserve stocks at such times as the public necessities most require and that no limitation of the period of permissible storage is necessary to protect the public interests so far as the effect of holding upon market prices is concerned

As to the effect of holding upon the wholesomeness of the food, I submit as a general proposition that since the market value of food falls as the apparent condition deteriorates there is no incentive to carry articles in cold storage until they become unfit for consumption or materially inferior as judged by trade inspections. Goods may sometimes be profitably carried to a point where their flavor may be impaired as compared with that of fresh goods, but only losses can be incurred if they become too poor for popular acceptance; and popular taste and smell are the natural bases of judging wholesomeness.

If there are chemical changes due to holding in cold storage which result in unwholesomeness and which can not be detected by popular inspection, this would undoubtedly form a valid reason for limitation of the storage period. But this can only be determined by extended research and experiment, in which loss of flavor must be differentiated from a condition deleterious to health. And if such periods are finally determined, at the end of which deleterious condition is reasonably to be feared despite evidence of commercially good condition, then it is unquestionable that the periods would be different in the case of different articles, and a general law limiting the permissible holding of all foods to the shortest period deemed safe for any would be opposed to public interest by interfering with the

conduct of business in natural accordance with market necessities, which must conform to the necessities of consumers.

Again, it is evident that the length of time foods can be safely carried in cold storage must depend chiefly upon their character, their condition when stored, and the atmospheric conditions during storage. Consequently, a limitation of the period of permissible storage would be no assurance that the products carried were wholesome. And it is evident that such articles as nuts and dried fruits can be carried without deterioration far longer than eggs or other more perishable articles.

Furthermore, I respectfully call your attention to the fact that only a small percentage of the perishable food products produced is carried for any considerable period in cold storage, and that fresh products, moving to consumers in the shortest practical time, are liable to as great, or greater, deterioration in quality and condition as are those carried in cold storage. Protection of the public health, so far as it can be provided by the Government, must, therefore, in the great majority of cases, depend upon inspection and the authority to condemn and confiscate unwholesome articles. Such power is provided by the food and drugs act and by laws authorizing procedure by boards of health, and if this is sufficient in respect to the great mass of food supply marketed fresh, it would seem sufficient also for the small proportion carried in cold storage, especially since the period of holding is of secondary importance as affecting deleterious changes of quality and condition.

Concerning the proposition to compel the labeling of products that have been in cold storage, with a statement of the period of such holding, I beg to suggest certain inherent difficulties which must be overcome before the object sought can be attained, and certain considerations as to the utility of this object.

It is a fact that during a large part of the year the great majority of the more perishable food products are handled and transported more or less in cold storage when passing in the most direct manner from manufacturer or producer to consumer. The thousands of packing establishments and factories are generally equipped with cold rooms for the protection of the products. Refrigerator transportation is generally used, and the larger distributing agencies are almost universally equipped with cold-storage facilities for transient protection. It would seem that with so universal a use of artificial cooling for the preservation of all perishable food the enormous labor and expense of labeling for transient periods of cold-storage protection would be entirely unjustifiable and, if enforced, would materially increase the cost of distribution. Also, in cold weather, food products are often carried for a considerable period, in the usual course of distribution, outside of cold storage, and if a statement of age of all goods placed for any period in cold storage were necessary or advisable the reason would apply equally or with even more force to such as were not so stored. If it is proposed to require labeling only of such goods as are held for an extended period in cold storage, and not of such as are placed in transitory refrigeration in the ordinary course of preparation, transportation, and final distribution, then some definite time or condition of storage must be specified for the application of the law.

It seems evident that labeling of packages with the time of storage would be useless in respect to surplus small fruits and berries put in

the refrigerators overnight to prevent spoilage; and even in respect to the more durable fruits, stored for longer periods, when any deterioration of their quality is so plainly visible, even if such labeling is deemed advisable in respect to articles whose changes of quality and condition are less apparent.

But even if labeling food with a statement of the period of its storage were sufficiently useful to warrant the labor and expense of the labeling and of an enforcement of a branding law, which would be extremely difficult, this usefulness would depend entirely upon the ability to carry to the actual consumer the information contained on the labels. The branding of wholesale containers, in which alone goods are handled in interstate commerce, would not accomplish this, because, in a majority of cases, wholesale packages are broken up and their contents graded and repacked by intermediate handlers for retail distribution.

The information of length of storage period could be conveyed to the purveyor to family and hotel or restaurant trade with certainty only if each unit of food were labeled, and the labor and cost of this would be incalculable. Even then, in the case of restaurant and hotel patrons who see the food only when cooked and served, it is difficult to conceive any practical means by which the information on the label could be conveyed to them.

So far as interstate commerce is concerned, cold-stored products when kept beyond the time normal to a reasonably direct distribution are now universally bought and sold as such. Knowledge of their storage age can be carried to consumers, if at all, only through the operation of state laws governing intrastate distribution.

The enactment of a federal law compelling branding of the original packages in interstate commerce would almost certainly be followed by the enactment of state laws patterned after the federal law. It is therefore of the utmost importance that any law enacted by the Congress should be such as could be practically enforced in intrastate dealings without a greater injury than benefit to the public. Undoubtedly any such branding requirements as would insure to consumers a knowledge of the length of storage would greatly enhance the cost of food. And such a costly requirement is seen to be of very doubtful utility when it is considered that the period of storage is no indication of quality or condition; that both as to wholesomeness and palatability goods not stored at all or carried in cold storage but a short time may readily be, and frequently are, inferior to other goods stored for a longer period.

In view of the above considerations, it is respectfully submitted in conclusion that federal law affecting cold-stored products would be most effective of public welfare if confined to the provision of governmental inspection and certification of foods entering or leaving cold storage; and that if any limit of permissible holding is imposed it should be fixed for each article according to its character and liability to deterioration, with due consideration of the natural trade requirements of preservation.

Furthermore, if such limits of permissible storage are imposed at all, goods should be exempted whose changes of condition are plainly visible.

(The committee thereupon, at 12 meridian, adjourned to Thursday, May 26, at 10 a. m.)

THURSDAY, MAY 26, 1910.

COMMITTEE ON MANUFACTURES,
Thursday, May 26, 1910—10 o'clock a. m.

The committee met pursuant to adjournment.

Present: Senators Heyburn (chairman), Gallinger, Oliver, and Smith.

The CHAIRMAN. Now, before starting this morning, I want to put into the record a copy of a letter which I addressed, as chairman of the committee, to Mr. Arthur Meeker, who is one of Armour & Co., at Chicago, requesting them to be present and give the committee the benefit of such information as they had. The letter is as follows:

MAY 20, 1910.

Mr. ARTHUR MEEKER,
Care of Armour & Co., Chicago, Ill.

DEAR SIR: Senate bill 7649, introduced as a result of the inquiry that is being made by a special committee appointed by the Senate to investigate the high cost of living, has been the subject of hearings before this committee. A number of representatives of those who conduct cold-storage plants, as well as chemists, have appeared before this committee and furnished information with reference to the alleged unwholesomeness of food kept in cold storage. By reason of your familiarity with the cold-storage business you could probably furnish valuable data which would be of interest and value to the committee in determining what action should be taken on the measure. Will you kindly indicate if you are willing to appear before the committee when a date will be set for the hearing?

Yours, very truly,

I have his reply under date of May 24, which is as follows:

MAY 24, 1910.

Hon. W. B. HEYBURN,
Chairman Committee on Manufactures, Washington, D. C.

DEAR SIR: I beg to acknowledge receipt of your courteous invitation to appear before the special committee appointed to investigate the high cost of living. I would gladly appear if I thought I could furnish any information that would be of value to the committee, but I have no special knowledge on the subject.

Thanking you, I am, yours, very truly,

ARTHUR MEEKER.

I wish also to submit a copy of a letter which I wrote to Mr. T. J. Connor, general superintendent of Armour & Co., Chicago, requesting that they be present or have some representative appear to give us any information which they have. The letter is as follows:

MAY 20, 1910.

Mr. T. J. CONNOR,
General Superintendent, Armour & Co., Chicago, Ill.

DEAR SIR: For several weeks this committee has been considering Senate bill 7649, to prevent the sale or transportation in interstate commerce of articles of food held in cold storage for more than one year, and for regulating traffic therein, and for other porposes, which was introduced as a result of the inquiry before the special Senate committee investigating the high cost of living. Quite a number of representatives of those engaged in cold-storage business, as well as chemists, have testified before the committee with reference to the alleged unhealthfulness of food kept in cold storage.

Thinking that because of your familiarity with the cold-storage business you would be able to furnish the committee valuable information on the subject, I write to inquire if you are willing to appear before the committee in the near future and give the result of your observations with reference to this subject and answer such inquiries as may be propounded by the committee?

Very truly, yours,

Mr. BURROWS. Inspected by the Government when it goes in and when it comes out.

The CHAIRMAN. Always when it comes out?

Mr. BURROWS. Yes, sir.

The CHAIRMAN. Is all of your product in cold storage inspected when it comes out?

Mr. BURROWS. The meat is.

The CHAIRMAN. I mean government inspection.

Mr. BURROWS. The inspector doesn't open every box, but I think there are eight or ten inspectors around our place, and they are right on to us all the time if there is anything wrong, and we are glad to have them.

The CHAIRMAN. You have a mark that tells when the meat is killed and placed in cold storage and taken out?

Mr. BURROWS. Yes.

The CHAIRMAN. That is a private mark?

Mr. BURROWS. Not necessarily.

The CHAIRMAN. And that tells when it was killed and went into cold storage and when it came out?

Mr. BURROWS. Tells when it was put into cold storage.

The CHAIRMAN. But not when it was killed?

Mr. BURROWS. No.

The CHAIRMAN. Now, this cooling process occurs at Kansas City and Chicago and Omaha, does it?

Mr. BURROWS. Yes.

The CHAIRMAN. And it comes to you in what shape?

Mr. BURROWS. In quarters.

The CHAIRMAN. Refrigerator cars?

Mr. BURROWS. Refrigerator cars.

The CHAIRMAN. From the killing, shipped immediately when it is killed?

Mr. BURROWS. No; it is cooled for forty-eight hours.

The CHAIRMAN. What temperature are those refrigerator cars?

Mr. BURROWS. Around 35, I should think—35 to 40; we try to keep them 35.

The CHAIRMAN. You take it out of the cars in which it comes in quarters or halves, as it may be, and put them right into your cooling room or freezing room?

Mr. BURROWS. It comes right to the cutting room where we cut it up in pieces, in different parts; then we sell—supply our wholesale market with what meat they can handle; they will want so many loins and so many ribs, and we give out to the market and we sell outside all we can, as fast as we can, and the surplus we put right in the freezer fresh.

The CHAIRMAN. Now, let me deal with that first. You send it right out on the market, as much as they will take?

Mr. BURROWS. Yes, sir.

The CHAIRMAN. And that has not been frozen?

Mr. BURROWS. No, sir.

The CHAIRMAN. It is sold open on the stalls of the dealers; do you deal with those that sell to the consumer?

Mr. BURROWS. Yes, sir.

The CHAIRMAN. How long would it be exposed in the open air?

Mr. BURROWS. Oh, I wouldn't think over an hour or two.

The CHAIRMAN. You think they would sell up that closely?

Mr. BURROWS. Well, the butcher has a box.

The CHAIRMAN. Now, after it has been in the butcher's box in the stall, I suppose that that is left over is brought back to you?

Mr. BURROWS. No.

The CHAIRMAN. Never at all?

Mr. BURROWS. No.

The CHAIRMAN. So you handle only the original product?

Mr. BURROWS. Yes, sir. I am mistaken in that a little. We do buy plates, some.

The CHAIRMAN. For canning?

Mr. BURROWS. For corned beef.

The CHAIRMAN. You make corned beef out of that, do you?

Mr. BURROWS. Yes.

The CHAIRMAN. You buy the left-over of that market for that purpose?

Mr. BURROWS. Yes, sir.

The CHAIRMAN. Do you buy from any others than those to whom you sell?

Mr. BURROWS. It doesn't make any difference so long as the beef is in good condition, and that is inspected by the government inspector when it comes into our house, and we would not buy it unless it has the government mark on it.

The CHAIRMAN. Now, do you mark your goods generally so you can tell the date of the killing?

Mr. BURROWS. No.

The CHAIRMAN. You have nothing to indicate how much time has elapsed between the killing of the meat and going into your cold storage?

Mr. BURROWS. Oh, yes, we can tell that; we know within a day or two; take in Chicago, beef killed to-day would go into cold storage Monday; we would cut it, and we would know, and beef coming from out of the city, we would know how many days it has been on the road.

The CHAIRMAN. Now, do you brand, or rather, do you date the cans in which you put the canned meat?

Mr. BURROWS. No.

The CHAIRMAN. Neither by an open or a secret mark?

Mr. BURROWS. No.

The CHAIRMAN. You keep no account of that—of the date of the can, and that can not be ascertained at all?

Mr. BURROWS. No.

The CHAIRMAN. Now, have you in pursuance of your duties given attention to the condition in which meat will be after kept in cold storage any particular length of time?

Mr. BURROWS. Yes.

The CHAIRMAN. When does meat begin to deteriorate after being kept in cold storage?

Mr. BURROWS. Well, cold storage, or a freezer? Cold storage is what we call a box where we handle our stuff from day to day; that is kept at a temperature of 35 degrees. Our freezer is where we place the meat salted.

The CHAIRMAN. Well, now, take those separately. When would meat begin to deteriorate in your cold-storage boxes as you call them?

all retailers display the same tag on the article to the customers. The enforcement of this would be impossible, and a cardinal rule for lawmakers is not to pass laws which are not enforceable.

It would be necessary to place inspectors not only in all of the cold-storage warehouses, but in every retail place even to make an attempt to enforce it; and if all that were done the shifting of tags could scarcely be stopped, even if we indulged the belief that all of the inspectors would be honest.

The Federal Government now has this matter under investigation, and it seems to me that it would be wise to await the end thereof before we do anything further about it. We should first ascertain exactly what the evil or abuse is, and then we will be in a position to pass a wise law providing an enforceable remedy. This proposed ordinance originated in worthy motives; but I think the mayor's suspensive veto should be interposed to it.

Respectfully, W. J. GAYNOR, *Mayor.*

I want to say, in connection with the mayor's message, that this question was discussed in New York; it has always been a subject of discussion there, that a statute of this kind would be a tremendous incentive to graft. For instance, any one going into a retailer's store and seeing goods displayed there without a tag in sight, the man is guilty of a misdemeanor and can be reported, and it would be exceedingly fruitful of that sort of thing in a great city like New York.

The CHAIRMAN. Was anything done by the council in regard to the ordinance after the veto?

Mr. FIELD. No, sir; it was dropped there. Now, in the legislature in New York at this session, I have attended, I think, all of the hearings on cold storage bills this year, and two of the twelve bills were reported out. I might say that they were reported out from the assembly codes committee when there were a very small number of the committee present—a bare majority, and when those bills came up on the floor of the assembly they were very exhaustively discussed, and by quite a large majority referred back to the committee, so that all legislation of this kind has been abandoned for this session.

Now, I have very decided views myself about what kind of legislation is practical, but before discussing that I want to run over some objections that I want to urge to the provisions of the bill as it now stands. I have been told—I do not know whether it is so or not—that there are likely to be amendments made to this bill.

The CHAIRMAN. I can state this positively: The committee will undoubtedly make amendments, and the amendments will be based upon such information as the committee receives through its various hearings. That is the purpose in having the hearings—to perfect the bill.

Mr. FIELD. Now, let me say a word about the matter of the fish trade, and I urge this so that the committee will understand that the interests involved in our branch of business are important and should be given due weight. In New York City the amount of fresh-water fish alone, leaving out of account the enormous quantity of salt-water fish consumed—the fresh-water fish consumed there weekly amounts to more than a million pounds. The salt-water-fish trade is even larger, and it is mostly congregated about the water front on the East River. There are two very large wholesale markets there, one called the Fulton Market Fishmongers' Association, the other the New York Wholesale Fish Dealers' Association, which latter organization I have represented ever since it was organized. Then there are a large number of merchants in the vicinity that have no room in the wholesale markets on the water front. Now, the fish trade is not

only important, but it has many features that govern the conditions of its business that make it especially important in considering a bill of this kind.

Now, your bill has two provisions: It fixes a one-year limit to cold storage; if it passes beyond that it is to be deemed adulterated; and the second one is that all cold-storage products shall be tagged.

The CHAIRMAN. I want to say right there that, of course, involves the consideration of the question of the method of tagging as applied to each peculiar class of cold storage.

Mr. FIELD. But I think we can demonstrate in our business that it is an impossibility. Now, first take up this question of a registration provision. A registration provision is impossible, and therefore improper, as applied to all food products. Now, in order to register—what I mean by that—I want to call your attention to the facts about cold-storage products. About one half in bulk of all cold-storage products are actually frozen while they are in cold storage. The other half are simply cooled, and cooled for various purposes, to accomplish various results.

Now, under the head of the frozen products we have meats, poultry, fish, and butter. Take meats, except pickled meats, they are stored at from 5 below zero to 10 above zero. Poultry are stored at from 15 to 20 below zero; about that. These figures, of course, vary somewhat, but I am giving substantially the conditions. Fish, at about 15° above zero. It is frozen at 10 below zero and kept at 10 above. Butter, at 10 below zero.

Now, take all of those frozen products: If they are frozen and properly kept—that is, if the conditions are right in the freezer—they can be kept indefinitely without injury. By indefinitely I mean more than a year.

The CHAIRMAN. That depends somewhat on the condition of the article when it went into the freezer, I suppose?

Mr. FIELD. Exactly. It is conditioned, first, on the fact of their going into storage in fine condition, and, secondly, on their being properly handled when they go in. Of course if the conditions are not kept right in your cold-storage warehouse, you would injure any kind of goods, because you do not keep the stable in proper conditions. And there is one feature of the conditioning of the air of the warehouse that I am going to discuss with you as one of the proper regulations that I have not seen in any of the evidence that has been gone into at all.

Now, take the cooled products: Fruits are stored at 32 to 48° above; vegetables at 29 to 48° above; nuts at about 32, simply for the purpose of killing worms; cheese at 32 to 55 above, according to what you want to accomplish; eggs, 29 to 33; and seeds at from 32 to 45.

The CHAIRMAN. Let me ask you there in regard to eggs. An egg under those circumstances would be actually frozen, I suppose?

Mr. FIELD. No, sir.

The CHAIRMAN. They would not?

Mr. FIELD. They freeze at 28°. They have got a good deal of latent heat, and it is almost a live animal; it breeds. We put it in just above the point of freezing. Now, hops are stored at 44°, for the purpose of preventing fermentation and candying. Pickled or brine goods, 32°, all according to the strength of the brine.

Now, I have run over this list for the purpose of calling your attention to this fact that the committee should bear in mind that you have got to treat every separate product on its own basis. You can not legislate for all cold-storage products any more than you can legislate on any branch of legislation for a large variety of articles or subjects that have varying conditions.

The CHAIRMAN. You refer to the element of time, I suppose?

Mr. FIELD. Yes. Now, I noticed in the testimony that was introduced here on cold storage, that is absolutely true, that in the case of most articles of food that are put in cold storage in, say, the spring or fall and frozen are far more palatable and fit for human food than absolutely fresh food that is consumed in the summer time—raised and consumed in the summer time. In other words, cold storage in its effect on food products has many elements of benefit. I think you will find, if you go into the meat question, that in Europe the very best trade there demands meat that has been in cold storage at least six months, so that we have got to consider that phase of this question as related to each one of the food articles under consideration.

Now, my next point in regard to this limit provision is that it puts a premium on the improper handling of food products and penalizes their proper preservation. Of course, I mean by that that you can not preserve the ordinary food product without some means of refrigeration. If you attempt to do it in any way it would be an improper handling of it, and yet, if a man spends the money to put his stuff in cold storage, and pays the considerable premiums for carrying it there in the best and most exclusively managed houses in the country, and has it handled by men who have given their lives to the study of those problems, if the conditions are absolutely right to keep that food in absolute good condition for a year, you penalize the man that does it, and you say that the goods that have been there for a certain length of time shall be destroyed at the end of that time, because they have been preserved, whereas the food that hasn't been properly cared for at all, if it is in existence at the end of a year, isn't affected by any legislation.

My next point is on that provision that it would require the destruction of wholesome and palatable food simply because it had been carefully and properly preserved for one year.

Now, we had in New York City, within a few weeks, a conference in our produce exchange there, presided over by Mr. Brown, of the New York Central Railroad Company, and very largely attended by merchants engaged in the various branches of the production of food, considering the question of the food supply. This legislation, as you very well know, Senator, has been instigated by the high prices of food products for the past year. Now, the high prices of food products are primarily due to a shortage of supply. The food supply of this country is getting to be a very serious question. This conference in New York brought out the fact that at the present rate the production of wheat would reach the limit of supply in our country here within a few years, and what is true of wheat is true in a larger sense and a more immediate sense of many other articles of food supply. We are getting an enormous congestion of population in our cities, and I think I can not be contradicted in saying that without proper cold-storage warehouses in our great centers of popu-

lation to-day we would have almost a famine with respect to many articles of food supply if we couldn't preserve them in cold storage.

Now, then, we say that at the end of a year we will destroy them simply because they have been there a year. Now, if it can be demonstrated that these goods are perfectly wholesome and palatable at the end of a year, why should they be destroyed? For some economic reason? They can not be destroyed for any healthy reason, if they are absolutely healthy, and we are at once brought up to the question that we are depriving citizens of their property without due process of law.

Senator OLIVER. Wouldn't there be some strength to this answer of that: That as the end of the legal limit approached, the owner of each particular article would feel forced to put it on the market and thereby it would tend to bring down the price of it to a certain extent?

Mr. FIELD. I think it would be just the other way. You take the man who has got the goods in cold storage; he has got his year's balance sheet to consider, and if he has got to sacrifice these goods because they are reaching the limit, without regard to the market, he has got to put up the price on his goods in order to make it up, and he will do it. The fact that you place goods out on the market may lower prices for a few days, or a short space of time, but it will not have that effect permanently. Now, I think it will have the opposite effect, take the year through, because you are placing goods out of the ordinary and usual channels of trade either by forcing a larger quantity out at one time or destroying a part of the supply at another.

Senator OLIVER. On the other hand, does not the cold-storage system as a whole tend to keep food products, to a certain extent, out of the few channels of trade, and thereby enable a systematic raising of prices?

Mr. FIELD. In my opinion, absolutely not.

The CHAIRMAN. What is there in this statement that went through the papers, and I think received some attention by another committee recently, when there was something in the nature of a protest, almost amounting to a rebellion, on the part of the producers of eggs as to the price, that some millions of them were put upon the market, and it knocked the price down 4 cents a dozen in one day, so as to compel those that rebelled against the system to sell their eggs to the cold-storage people?

Mr. FIELD. I do not know how much truth there was in that, Senator.

The CHAIRMAN. It was in connection with the New Jersey investigation; that is a point in the line of the suggestion of Senator Oliver.

Mr. FIELD. Yes, sir; there was a very interesting occurrence in New Jersey relating to cold storage that has somewhat of a bearing on that qestion. One of the judges in New Jersey was charging the grand jury at the time they were investigating this subject, and preliminary, I think, to the indictments that were found in New Jersey, and the judge began his address to the grand jury by stating that it must not be considered that cold storage was a bad thing; that we have the strongest scriptural warrant for saying that it was an exceptionally good thing, and then he cited the experience of Pharaoh storing up the corn for seven years, during the years of quantity, and selling it in the years of famine.

The CHAIRMAN. Let me say this: The purpose of this investigation is not directed to the destruction of cold storage, or directed against cold storage as a method of business for the preservation of articles of food. That is not the purpose of this investigation. The investigation is being made on behalf of both the cold-storage people and the consumer, and we are giving considerable attention to the interests of the consumer.

Mr. FIELD. Yes, sir; and I am quite sure that in considering the consumer you are not going to leave entirely out of consideration the interests of the producer, without whom there would be no consumer.

The CHAIRMAN. No; that is a question that always runs through a consideration; and we are in this committee inquiring more particularly as to the effect upon the healthfulness of cold-storage products. There is another committee investigating the effect of prices, but this is the Committee on Manufactures, investigating the question on behalf of the consumer, to the end that we may have healthful products.

Mr. FIELD. Now, I want to discuss at this point the conditions of storing fish in cold-storage warehouses. The method is this——

The CHAIRMAN. Can not you commence with the producing of the fish, giving us something as to the conditions under which the fish are caught and kept prior to being placed in cold storage, as to time, source of product, and condition?

Mr. FIELD. Yes; we will take the fresh-water fish.

The CHAIRMAN. Now, name some of those, will you, please?

Mr. FIELD. Well, the various varieties of pike and perch and whitefish.

The CHAIRMAN. Do you class shad with the fresh-water fish?

Mr. FIELD. Oh, no; that is salt-water fish. Then, there are various kinds of fresh-water trout, some sturgeon; that is getting quite scarce in our waters. They are the main fresh-water fish; they are caught in either a point net or a gill net in the rivers.

The CHAIRMAN. In what parts of the country?

Mr. FIELD. Of course, the cold-storage warehouses get their fish from wherever they are caught.

The CHAIRMAN. Where do you get your whitefish from?

Mr. FIELD. From the Great Lakes.

The CHAIRMAN. And in what shape do they come to you?

Mr. FIELD. Well, the whitefish are taken out of the nets by boats—either rowboats or tugboats or some sort of a vessel—and they are taken immediately to the place where they are either packed and shipped to the market to be consumed fresh, or placed in cold storage.

The CHAIRMAN. Where?

Mr. FIELD. There are cold-storage warehouses all along the shores of the Great Lakes.

The CHAIRMAN. They are first placed in these cold-storage warehouses, are they?

Mr. FIELD. Not if they are sent immediately to the market.

The CHAIRMAN. What I want is the history of the fish on the way to your cold-storage plant.

Mr. FIELD. Well, I am going to take that up, but by far the larger part of the supply goes immediately on the market. The amount of fish that is stored for the entire year in all of the storage warehouses wouldn't supply the New York market but a few days.

The CHAIRMAN. How much would it amount to?

Mr. FIELD. Mr. Warden, of the Booth Fisheries Company, states that his firm freezes from 15,000,000 to 20,000,000 pounds of fish per annum. That would only supply the New York fresh-water fish market for about half of the year.

The CHAIRMAN. Can you name some of the other large fish-freezing establishments?

Mr. FIELD. Well, the independent freezers in New York City practically all handle fish. There is a very large freezer in New York, under the arches of the Brooklyn Bridge, called the "bridge freezer," and that is almost wholly taken up with the freezing of fish, principally because of its nearness to the fish market. We have here today the consulting and supervising engineer of the largest and, I think, undoubtedly the finest and most successful cold-storage warehouse in this country.

The CHAIRMAN. Now, will you tell us something of the manner of freezing fish and holding them in cold storage?

Mr. FIELD. I want to disabuse the minds of the committee of the impression that I see runs through some of the testimony here that fish are not properly handled from the beginning. As a matter of fact, when fish are taken up out of the nets and put into the holds of vessels they are immediately covered with ice, and they are kept iced at every stage until they are either put on the market in the various consuming points or frozen in cold storage. Now, in the freezers fish are treated different from any other article of food, and in considering the question of fish the committee should consider it separately. In the first place, we thoroughly wash the fish.

The CHAIRMAN. At what period?

Mr. FIELD. I am talking now about the process of freezing. When we get them into the freezer we thoroughly wash them, then we sort them out into kinds and sizes. Then we put them in pans of a size and shape that will represent the box in which they will be shipped, and then they are frozen at a temperature of about 10° below zero. When they are thoroughly frozen, each fish is dipped in water and glazed with ice. Now, the fish being at that point so much colder, having been solidly frozen, being so much colder than the water, just dipping it into the ice puts a glaze of water all over it.

Senator OLIVER. You mean the water puts a glaze of ice all over it?

Mr. FIELD. Excuse me; yes; that is what I mean, of course.

The CHAIRMAN. Are they cleaned; are they drawn?

Mr. FIELD. No, sir; we do not consider it necessary to draw them. We think we can get better results, and that belief, I think, is concurred in by all fish people, that you can get better results by not drawing fish, or, as the trade calls it, gutting them.

Now, after you have got the fish glazed with ice, you have got it in a hermetically sealed package, and if the conditions are kept right so that the glazing is not interfered with and the air conditions are right that fish will keep indefinitely.

The CHAIRMAN. Is the glazing apt to be cracked in handling the fish?

Mr. FIELD. Not at all.

The CHAIRMAN. How heavy is the glazing?

Mr. FIELD. Oh, very thin—about an eighth of an inch.

Now, a statement was made here by one of the experts of the Department of Agriculture that this glazing had to be renewed every three months. If it does, it shows improper handling of the goods; it shows that the air was too dry in the place where the fish was kept, and the ice evaporated. Of course, we presume that they keep their temperature down to a proper degree, but the temperature isn't as important a matter or any more important than the condition of the air. A fish, Senator, is a water animal, and it is 90 per cent water. Now, if you have the air in a cold-storage plant so dry that that water is evaporated out of the fish, you see you have a very small part of an edible fish left, so that the air condition is just as important in our part of the business, and in all parts of the cold-storage business, as the question of temperatures; and so far as I have seen in the evidence that question hasn't been touched on at all before you, and that is a matter I want to say a word or two about in finishing on this question.

Now, as I said before, I want to impress this point on the committee, that if you get a fish in that hermetically sealed package and keep the air conditions and the temperatures right, you can keep that fish indefinitely, and there is no more reason why it should be destroyed at the end of a year than there is why you should go out into any dry goods store or any other warehouse in the city of Washington and destroy valuable goods of any kind.

Now, a few words on this subject of tagging as applied to fish, and I am going to discuss that from the fish standpoint. There are some fish that are very small. Take white bait; it takes several hundred of them to make a pound; they are usually served on a piece of toast, and you eat them heads and tails and bones and insides and everything. It is impossible even to clean them. Now, what is true of white bait is true in some degrees of such fish as smelts, ciscos, blue pike, and other small varieties of fish. Take any fish under a pound; now, you take a very small fish of that kind, and if you attempt to tag it in any way you are going to largely increase the cost.

The CHAIRMAN. They can be packed in boxes, can they not?

Mr. FIELD. You mean, simply stamp the package?

The CHAIRMAN. Yes.

Mr. FIELD. I am going to show you that as the fish trade is conducted, and has got to be conducted, that that is almost an impossibility, and your idea is to give the history of the cold storage of that fish to the consumer——

The CHAIRMAN. Our point is to give the history, not only of the storage, but of the period before storing.

Mr. FIELD. Now, the only person that you desire to protect in regard to tagging is the consumer, undoubtedly, and the consumer only deals with the retailer. Now, I think I can demonstrate to you that it is impossible to handle a fish, so far as the retail trade is concerned, by simply tagging the packages.

Now, there is another point, if you have got to tag the carcass of the fish; in hot weather the very handling of the fish would either seriously injure or destroy them. Fish is very tender; it is a very light and delicate meat—some fish more than others—and just the simple handling of fish too much damages it.

The CHAIRMAN. Tell us what character of packages those fish are placed in.

Mr. FIELD. Either in boxes or barrels.

The CHAIRMAN. How large?

Mr. FIELD. The fresh-water fish, the average fresh-water fish that comes from the interior to the New York market, comes in 100 and 200 pound boxes; generally 200 pounds. The salt-water fish are almost entirely shipped in barrels about the size of a flour barrel; not as large as a sugar barrel.

The CHAIRMAN. Any more difficulty in tagging those packages than there is in a box of cigars?

Mr. FIELD. I am going to touch on that in a few minutes; that is a very different proposition.

Senator OLIVER. I do not think it is necessary to deal on the separate tagging of the fish.

Mr. FIELD. That is an impossible proposition; it was found so in New York; they abandoned it in the board of aldermen.

The CHAIRMAN. I do not think the tagging of the separate fish needs to be considered; the tagging of the boxes needs to be.

Mr. FIELD. I am going to discuss that. Take this question on the tagging proposition. We, in New York City, do not produce a great deal of the fish that we use; it comes there from other States.

The CHAIRMAN. How far away?

Mr. FIELD. Why, as far as the northwest lakes during five months of the year, and the fresh fish we get, that is, fresh-water fish, is caught through the ice in the Manitoba Lake, Lake Manitoba, Lake Saskatchewan. We can not get fish from the Great Lakes in the stormy winter weather, but in these big lakes in Canada, they are frozen over with 5 feet of ice, and the fish down underneath this ice have a very short supply of air, and you can cut a hole in the ice and the fish will come there from all quarters to breath through that hole, and just drop a gill net down there and you can take the fish right up out of the water. Now, you leave those fish on the ice there in the low temperatures of Canada and you get a naturally frozen fish in a few minutes.

The CHAIRMAN. Do they freeze solid?

Mr. FIELD. Absolutely solid.

The CHAIRMAN. Now, after that are they allowed to thaw at all?

Mr. FIELD. No, sir; they are put in boxes and put in refrigerator cars and shipped right to the New York and Chicago and Boston and Philadelphia markets.

The CHAIRMAN. Do they come there frozen solid?

Mr. FIELD. Yes, sir.

The CHAIRMAN. Always?

Mr. FIELD. Well, I won't say that they are always frozen solid when they get there, because if the weather should come off warm the refrigerator cars, some of them, would not keep them frozen absolutely solid, but they are in absolutely prime condition when they come into the market, and in almost every case absolutely solid.

But now, what I was going to speak of was this: That these fish are put into cold-storage warehouses in the West. Now, suppose they are put in by private owners for their local market; that doesn't come under the interstate-commerce law; it wouldn't be affected by

this act; they wouldn't be affected by this act unless they were shipped somewhere else. Now, sometimes those fish are shipped down to New York, and when they get down here they are subject to a tagging ordinance under your law; they have had a long history of cold storage in the West that isn't recorded at all, and there is no way of learning, through legislation, the real history of this fish; how are you going to cover that?

The CHAIRMAN. That can readily be covered when they enter interstate commerce. They enter into interstate commerce when they are placed aboard the cars for shipment to a point beyond the State.

Mr. FIELD. But they are not in cold storage then.

The CHAIRMAN. That is what I want to know.

Mr. FIELD. When they are delivered to the cars, you say they enter into interstate commerce; that is true, but they are not, then, when they are sent to the cars, in cold storage.

The CHAIRMAN. We are not dealing alone with cold storage in the sense of freezing; we are dealing here with the question of the healthful condition of these fish, or other food products, and it matters not whether they are in cold storage, if they are not in a healthful condition. It is within the purview of our investigation to cover all of these matters.

Mr. FIELD. Then you intend some very considerable modifications of this bill as drafted?

The CHAIRMAN. The committee will have to take care of the bill.

Mr. FIELD. Now, let us take up this question of tagging the boxes or receptacle. The retail dealer very rarely buys as much as a box or a barrel of any one kind of fish. You go into any retail fish store in any city; take it in Washington, or New York, or Chicago, or anywhere—the fish dealer has to have ten or a dozen varieties or more of fish for his supply. His trade is almost entirely confined to two days in the week. Now, he only gets a few pounds of bluefish and a few pounds of whitefish, and so on through his supply. Now, then, how is his fish going to be tagged? He hasn't got any original package; it is rare that the retailer has got a single original package of any single kind of fish, and he has got, we will say, fifteen varieties of fish in his store during the week. Now, how in the world are you going to bring the tag that is on the package in the hands of the wholesaler home to the consumer? That wholesaler sells out of a box to everybody until the box is empty, or the barrel.

The CHAIRMAN. That is a question of local regulation.

Mr. FIELD. So that I do not see how you are going to bring that question home to the retailer, even if you tag the box or the package. You asked if it was any more difficult than a box of cigars. The consumer himself very frequently buys a box of cigars. The retailer always has his cigars in the original box. He couldn't sell them if he didn't have them that way, but the retailer rarely ever has the original package in his retail store in which the fish were shipped to the wholesaler, or shipped by the producer.

Now, you take it in New York City, the retailers come over with their wagons on the market days to Fulton market; that is the general designation of that territory where the wholesale merchants are congregated. He goes through the wholesale market to the various stores to find out who has got the best and most reasonable price for

the supply of the various fish that he wants in order to make up this quantity, and he has a number of barrels, generally bárrels that he has brought over in his wagon, and he has the fish weighed out of these separate boxes and loaded into his barrels until he gets all the fish he wants, and then he takes them over to his market and puts them in his ice box, with a few scattered out over his show table and sells his goods. Now, how in the world is that retailer going to have any pretense of tagging in any part of his supply?

The CHAIRMAN. Now, you are not interested in that. We have got to deal with that when we come to the retailers, but that doesn't affect the question of holding them in cold storage, which is the question we are inquiring about.

Mr. FIELD. But it affects this provision of your bill that requires everything to be tagged. Now, we are the handlers of cold storage quantities of fish; we turn over every week in New York City an enormous number of pounds of fish. Now, we can see no way of working out this problem of tagging that can be even approximately universal.

The CHAIRMAN. Suppose we consider it from the standpoint of tagging within your jurisdiction, and let us deal with the question of the retailer later on?

Mr. FIELD. What is the object of that, Senator? Why should the wholesaler have his boxes tagged? You have got a perfect record of the cold-storage history of these fish through the records of the cold-storage warehouses and the warehouse receipts. Just have a provision for preserving your warehouse receipts and holding them open to inspection.

The CHAIRMAN. Let us now get at some facts that are in our inquiry. You can proceed; you have some memoranda there?

Mr. FIELD. That is all I care to say about the tagging question. If your committee can devise a scheme for tagging fish, either in original packages or separate packages of fish that is either practical or can be enforced, I shall be very much surprised. You see what this message of Mayor Gaynor says on that subject; that it is impracticable and couldn't be enforced if passed.

Now, what is the proper scientific method of handling this question that you are trying to reach? Just let me say that there are, in my opinion and in the opinion of the people I represent, two ways of handling it. The first is by proper inspection, and the second is the drafting of a law for the proper handling of food products in storage, especially as to the condition of the air.

Now, the question of inspection, I see, has been discussed at considerable length in your committee. My opinion is that inspection is the first essential; it is a scientific method. You are trying to find out whether a cold-storage article of food is fit for human consumption. The length of time in cold storage has no relation to that fact. You will be right up against the courts instantly you pass such a statute. Inspection will absolutely determine whether a food product is fit for human consumption. It should be inspected when it goes into the warehouse, to find out whether it goes in in proper condition, because cold storage will not restore to good condition a food product that is in bad condition. It should go into cold storage in absolutely good condition. Most of the fish merchants—I won't say all, because I don't know all of them—but all of

the merchants I know anything about allow no fish to be frozen that is not absolutely in prime condition, because it doesn't pay them to do it; it wouldn't pay them to pay the large charges that we have to pay for handling fish. Remember that fish have to be handled, as I have indicated to you, in a very careful way, and it is a very expensive process, and we have to pay for it. So that inspection is the first thing, and we do not care how much inspection you give us, gentlemen, so long as it is not an inspection that is going to seriously interfere with the handling of the stuff. Of course, I suppose you intend to regulate it through the Agricultural Department, or in some way so that it will not absolutely prevent our doing business?

Now, the Department of Agriculture has to-day absolute access to all fish that is in interstate commerce and all other cold-storage products that are in interstate commerce. They are just increasing the number of their inspectors. I do not know whether that bill has been passed, but I saw that the Secretary had asked for 25 additional inspectors, and stated to the committee of the House that he intended to have resident inspectors constantly on hand in such centers as New York City so that they could constantly keep any cold-storage products in New York City and such centers under their supervision.

The CHAIRMAN. What length of time, is the maximum that you carry fish in cold storage?

Mr. FIELD. Why, we have never reached the maximum on that, Senator. By that I do not mean that we, on the average, keep them there a great while; I do not presume that our cold-storage bills, of the average wholesale merchant houses, will run over four to six months, but if that merchant has an exceptionally large supply of fish and can not dispose of them at one season, he will carry them over to the next.

The CHAIRMAN. Now, when you say, "over to the next," that will mean an additional year?

Mr. FIELD. Yes.

The CHAIRMAN. Will he carry them over again to still another year?

Mr. FIELD. I have never heard of such a case, but I have heard of fish being kept in cold storage for many years for experimental and other purposes, and being absolutely impossible to detect the difference.

Now, when I get to the question of air conditioning, which I want to say a word about, I want to say this—and this hasn't been said before your committee so far as I can find, and it is something that runs through this whole question of cold storage, and that is the air conditions. Every properly conducted cold-storage warehouse has a laboratory or some efficient scientific means of ascertaining the quantity of water in the product that they are putting in cold storage. Now, you take the egg; the egg has 27 per cent of solid, 3 per cent of air, and 70 per cent of water. Now, the air in the room where the egg is stored has got to be kept at 70° of moisture at the temperature at which you keep it stored. Of course, when you are considering air moistures, when you get down to colder temperatures, the amount of grains of moisture that can be held in suspension in a cubic foot of air is very much less than it is when it gets hot. For instance, water will be precipitated at zero very quickly, whereas at a temperature of 70° it is very difficult to precipitate it, so that when you are

carrying eggs, for instance, you keep the quantity of moisture in the air at the same amount as there is in the egg. If you have it less the egg will dry up; if you have more the egg will mold, and in either case it will split and show that the egg has died.

The CHAIRMAN. Is that true of fish?

Mr. FIELD. It is not true of fish in the same way, but it is true in this way: A fish has 90 per cent of water in its construction; it is a water animal. Now then, with regard to fish, we have to keep the moisture in the air at 90° and above, and we do it in the properly conducted warehouses where fish are stored by, in the first place, putting a coating of ice all over the floor; in some of these rooms you will find 2 inches of ice on the floor. They take the frost that accumulates on the pipes and brush it off and sprinkle it all over the boxes. Sometimes they hang up white cloths around in the room—do anything that may be necessary in order to get your humidity to 90° or above. It does not make any difference how much above it is in the case of fish, whereas in eggs you have got to get it just right; but in the case of fish, if you store your fish in proper temperature in a room that is too dry for the fish you are going to dry out that moisture; it is absolutely bound to be so.

The CHAIRMAN. Well, does that occur sometimes?

Mr. FIELD. It certainly does, if you do not properly handle it.

The CHAIRMAN. Well, then, does it as a matter of fact?

Mr. FIELD. Yes, it does, as a matter of fact, and your fish will dry up; the juice will be all taken out of it; the larger part of the fish will be gone.

Now, in all of the houses that are devoted absolutely to the handling of fish, they understand those things, and they keep it right. In some places where they don't understand it, they may not do it right, but any fish merchant that understands his business will insist on having it right, and remember this, that a cold-storage warehouse is an insurer; you give a receipt for goods in apparently good condition, and you deliver them in an imperfect condition, and you have got to pay the value of them, absolutely; just the same as a common carrier; and a storage warehouse that amounts to anything in the volume of business it carries is absolutely bound to do that.

The CHAIRMAN. Your refrigerators in which you carry fish are institutions for hire. Do you carry those fish for hire for other people?

Mr. FIELD. None of the clients that I represent here to-day own any public storage warehouses.

The CHAIRMAN. They are all private cold-storage warehouses?

Mr. FIELD. Yes, sir; but we patronize large numbers of the public storage warehouses?

The CHAIRMAN. Well, do you furnish fish to persons who place them in storage in public warehouses?

Mr. FIELD. Very rarely; most of our fish goes right to the retail handlers.

The CHAIRMAN. What percentage of the fish in New York do your concerns carry?

Mr. FIELD. I should say fully one-half.

The CHAIRMAN. How much?

Mr. FIELD. Fully one-half, I should say; take fresh and salt water together, I should say one-half.

The CHAIRMAN. Now, are the shad subjected to the same conditions?

Mr. FIELD. If they are frozen; yes.

The CHAIRMAN. Where are they frozen for the first time?

Mr. FIELD. There are some freezers, I understand, down along the Atlantic coast at various points. The shad commence running very early, and there is some supply of them during a good many months of the year. The freezing of shad is not nearly as large a proportion of the freezing fish as most other fish products.

The CHAIRMAN. Well, is it not a fact that the shad caught in open boats; that is, caught into open boats, are in that boat without any freezing at all a considerable length of time before they reach the ice? And right there, confine yourself at present to the Atlantic coast shad caught in the rivers. From whom do you obtain those fish?

Mr. FIELD. Why, we obtain them from the producers as they come up the coast. All fish that migrate, such as shad and mackerel and bluefish, begin down off the Southern States, and they are followed up by the fishing fleets, and the boats put into the nearest shipping point for the purpose of shipping them to New York, and as soon as they are caught, they are iced, every fish that goes out—shad and mackerel and bluefish; every boat that goes out takes its own supply of ice.

The CHAIRMAN. That is in ocean fishing?

Mr. FIELD. Yes, sir.

The CHAIRMAN. How about the river fishing?

Mr. FIELD. The same way.

The CHAIRMAN. You think all of those fish are placed on ice that are caught in the Potomac and Delaware rivers, and others?

Mr. FIELD. There is no production here in the Potomac and Delaware that reaches the New York market.

The CHAIRMAN. You get the Connecticut River fish—shad?

Mr. FIELD. Yes; we get shad from everywhere.

The CHAIRMAN. Well, speaking now of river shad caught in the rivers, where do they accumulate before you buy them? You do not buy them in small lots, I suppose?

Mr. FIELD. They are sold fresh.

The CHAIRMAN. I am speaking now, not of those that are sold fresh on the market, but I am speaking of those that find their way into cold storage.

Mr. FIELD. Mr. Prankard is president of the Wholesale Fish Dealers' Association of New York City, and he can give you better information on that than I can.

The CHAIRMAN. You have no personal knowledge as to the length of time that elapses between the catching of river shad and the time they are frozen?

Mr. FIELD. Only except the freezing of shad; the Atlantic coast shad is very rare, I think—that is, the freezing. There is very little of it frozen, but all fish that we bring to the markets are put in cold storage; whether they are caught on the lakes or the rivers or the oceans they are caught by boats that carry a supply of ice with them to the fishing grounds, and they are iced the moment they are caught.

The CHAIRMAN. Cracked ice?

Mr. FIELD. Yes, sir.

The CHAIRMAN. Are they taken out of those boats that have the cracked ice? They are freed from the ice, passed on to the wharf, and then they go where?

Mr. FIELD. Why, generally the freezers and houses where they are handled are right at the water front, so they are generally loaded right into the wholesale houses where they are repacked and reiced for shipment wherever they are going, and if it is on a long journey——

The CHAIRMAN. I am speaking particularly about those that remain, that go into your cold-storage houses and are frozen to be kept such periods as you have suggested.

Mr. FIELD. They are immediately put into a freezer. For instance, the houses that operate on the Great Lakes, fresh-water fish, they have freezers at numerous points and the boats put right in there; and let me say this: That it isn't very many years ago that you would see on the shores of Lake Erie, a wharf piled mountain high with whitefish that couldn't be sold, and farmers' wagons coming down and taking them off for manure fertilizer. None of that to-day; every pound of fish is preserved that is fit for food and that would have a favorable effect on the market. I state that to illustrate the fact that under old conditions you would have a much poorer condition than you have to-day.

Now, one more word before I stop, and that will conclude what I want to say, and that is on the legal aspect of the case, and just let me add this word here that Mr. Mack gives me, that unless fish are iced when caught they are not frozen by the substantial fish dealers; they won't handle them unless they have been properly handled up to the point of freezing.

Now, if you are going to have an absolute provision for the destruction of food that has been in cold storage for a year, or if you are going to have a tagging ordinance that isn't absolutely required for the protection of health, unless you can show that it is unconstitutional——

The CHAIRMAN. Well, we will have to take care of that question.

Mr. FIELD. May I ask you to let me refer for a moment to one case in New York State?

The CHAIRMAN. Yes.

Mr. FIELD. I refer to one of our leading cases there, People *v.* Hawkins, which was the case of requiring prison-made goods to be stamped "Convict made," and the whole question is discussed there, and I just want to read one or two passages. It is taken up by the New York court of appeals on the proposition that it deprives a citizen both of his liberty and property——

The CHAIRMAN. Give the reference to the book and page.

Mr. FIELD. One hundred and fifty-seven New York, at page 1. Now, he ends up his discussion of the case by saying:

> Any attempt to carry the police power to such an extent as to require the owner of an article of property kept for sale, such as a scrubbing brush, to label it with the history of its origin and to indicate the place where it was made and the class of workmen that produced it, and to enforce such regulations by the aid of the criminal law, must be regarded as an inexcusable and intolerable invasion of the rights and liberties of the citizen.

Now, the proposition is very fully discussed there that the State can not, under the guise of a health law or labor law or any other kind of a law, interfere with the absolute liberty of the citizen in disposing of

his property unless they can show that it is actually a measure demanding in order to protect the health of the people or concerning its interests under the proper definitions of the police power.

Now, if it is true, as we contend here, that the length of time that fish is stored, if it is properly stored, has absolutely no relation to health, then this kind of legislation is unconstitutional.

I think we have a case here that the committee will consider substantially strong without touching at all upon the legal aspect of the case; but I simply want to mention, perhaps that can be considered by the committee, because the committee, of course, does not want to pass ineffective legislation or legislation that is in no way designed to reach the evils that they are trying to correct. I think, gentlemen, that that is all.

Just let me suggest that if the committee does draft a new bill with entirely new provisions that the fish trade are very vitally interested and would like to be heard on any new legislation that is proposed, and also we favor giving the Department of Agriculture ample powers to cover this whole matter.

The CHAIRMAN. They are merely the agents of Congress; we created the Department of Agriculture; we direct it.

Mr. FIELD. Just give them the power of inspection and power of regulation in all respects and that the bill be directed absolutely to the points at issue, Is the food healthful or is it not? That is the position that I wish to urge.

STATEMENT OF MR. FRANK D. MACK, OF NEW YORK CITY.

The CHAIRMAN. Will you please give your full name to the stenographer?

Mr. MACK. Frank D. Mack.

The CHAIRMAN. What is your address?

Mr. MACK. 346 Broadway, New York.

The CHAIRMAN. You are a cold-storage engineer?

Mr. MACK. Yes, sir; I have been in the cold-storage business practically all my life.

The CHAIRMAN. Your duties consist in determining the conditions of cold storage and the appliances?

Mr. MACK. Supervising and directing the maintenance and operation of cold-storage plants.

The CHAIRMAN. With what particular concern, if any, are you connected?

Mr. MACK. The Terminal Warehouse Company at New York, and the Booth Fisheries Company.

The CHAIRMAN. Have you knowledge as to the quantities of fish in cold storage?

Mr. MACK. That varies from week to week.

The CHAIRMAN. Give us, as near as you can, a statement of the quantities in cold storage during each month in the year, a general statement.

Mr. MACK. I can prepare that for you.

The CHAIRMAN. You say you will?

Mr. MACK. Yes, sir.

The CHAIRMAN. We will be glad to have you do that.

Mr. MACK. Our Mr. Prankard, I believe, has that.

The CHAIRMAN. He says he has not. You will prepare that and submit it in connection with your testimony. Have you general knowledge that you could state any of the facts concerning it?

Mr. MACK. The storing and freezing of fish is only about two months of the year.

The CHAIRMAN. Twelve months?

Mr. MACK. They begin storing or freezing their fish during the month of April and wind up in about six weeks, and begin again in the fall.

The CHAIRMAN. Does that apply to all kinds of fish?

Mr. MACK. Fresh-water and a great many kinds of the salt-water fish. There is one reason for that. It has been stated here that food that is furnished fresh during the summer season is not as wholesome as food that is cold storaged and carried for several months, having been put into cold-storage plants during the spring and fall. The reason for that is this: You take almost any animal; it is hardier during the winter season, during the cold weather; its flesh is stronger, and I myself would rather have a fish caught during the months of March or April and put in cold storage for nine months than I would a fish caught in July and eaten right off.

The CHAIRMAN. Dou you give personal supervision of the plants during all seasons of the year?

Mr. MACK. Yes, sir.

The CHAIRMAN. Do you direct as to the temperature?

Mr. MACK. Yes, sir.

The CHAIRMAN. How long are fish kept in cold storage as a maximum?

Mr. MACK. They will average about six months; my opinion is that they can be kept almost indefinitely.

The CHAIRMAN. Well, you say they are principally placed in cold storage during two months in the spring. Now, is there another season of the year?

Mr. MACK. Six weeks in the spring and four weeks in the fall.

The CHAIRMAN. What four weeks?

Mr. MACK. Along in October and November.

The CHAIRMAN. What class of fish?

Mr. MACK. All fresh-water fish and a great deal of the salt-water fish.

The CHAIRMAN. Are any considerable quantity of the spring catch carried over until the next year?

Mr. MACK. Very little.

The CHAIRMAN. What would you call very little?

Mr. MACK. Well, that is hardly in my province to determine, because my business is to supervise the caring for the products in cold storage.

The CHAIRMAN. Now, do you have anything to do with the determination of the quantity of fish that are in cold storage at all, except as a mere observer?

Mr. MACK. I simply receive it and see that it is properly cared for.

The CHAIRMAN. You know nothing as to quantities?

Mr. MACK. Not as to the quantities; I take care of what is turned in.

The CHAIRMAN. Have you any personal knowledge, or is it within your province to determine how long fish are held in cold storage?

Mr. MACK. Yes, sir.
The CHAIRMAN. That is part of your duty?
Mr. MACK. Yes, sir.
The CHAIRMAN. You keep a record of it?
Mr. MACK. Yes, sir.
The CHAIRMAN. When it comes in and when it goes out?
Mr. MACK. Yes, sir.
The CHAIRMAN. And the identity of it?
Mr. MACK. Yes, sir.
The CHAIRMAN. Are you familiar with the cold storage of other products than fish?
Mr. MACK. Yes, sir.
The CHAIRMAN. What product?
Mr. MACK. All products cared for by the terminal warehouse.
The CHAIRMAN. What products?
Mr. MACK. We carry very few eggs; eggs we do not consider very profitable storage.
The CHAIRMAN. What quantities?
Mr. MACK. I think we have this year less than 100,000 cases.
The CHAIRMAN. How many eggs in a case?
Mr. MACK. Thirty dozen.
The CHAIRMAN. Now, what else besides eggs?
Mr. MACK. Butter and cheese.
The CHAIRMAN. What quantity of butter do you carry?
Mr. MACK. That varies according to the supply and the demand.
The CHAIRMAN. What season is the butter generally placed in cold storage?
Mr. MACK. We get it early in the spring and late in the fall.
The CHAIRMAN. What quantities of butter do you carry in cold storage, these companies that you represent?
Mr. MACK. Well, I haven't the least idea, because I have charge of four of the largest cold-storage warehouses in the world, and I do not know how much.
The CHAIRMAN. Are they four of the largest butter-storage houses of the world?
Mr. MACK. Yes, sir.
The CHAIRMAN. You have no knowledge?
Mr. MACK. It changes much according to the season of supply; I do not remember from day to day.
The CHAIRMAN. Do you carry anything except pure butter?
Mr. MACK. Packing stock.
The CHAIRMAN. What do you call packing stock?
Mr. MACK. Packing stock is a grade of sour-milk butter that is made by the farmers; it isn't creamery butter, and it isn't good dairy butter.
The CHAIRMAN. What is done with that?
Mr. MACK. It is worked up and renovated and sold for cooking purposes.
The CHAIRMAN. Do you do that?
Mr. MACK. No, sir.
The CHAIRMAN. You just hold it?
Mr. MACK. Yes, sir.
The CHAIRMAN. For what length of time?
Mr. MACK. Indefinitely.

The CHAIRMAN. Three or four years?
Mr. MACK. We may keep it two or three or four years without harm.
The CHAIRMAN. Do you?
Mr. MACK. Never have had the chance, because the cold-storage charges would eat it up.
The CHAIRMAN. Give us some estimate of the time you do hold it in cold storage?
Mr. MACK. The usual season is six months on the butter.
The CHAIRMAN. Are there any gentlemen here who can give us an idea as to the quantity?
Mr. MACK. I can give you the quantities, if you want it.
The CHAIRMAN. I would like to have the quantities and have it by months.
Mr. MACK. Very good.
The CHAIRMAN. Both as to butter and fish.
Mr. MACK. Very good.
The CHAIRMAN. Now, what do you do with it—that is, to whom does it go when it comes out of cold storage?
Mr. MACK. The wholesale butter dealers. They put it in and they take it out.
The CHAIRMAN. Is it in boxes?
Mr. MACK. Generally in tubs.
The CHAIRMAN. Any difficulty in labeling those tubs as to the date?
Mr. MACK. No, sir.
The CHAIRMAN. Is it in bulk in the tubs or in packages?
Mr. MACK. In bulk; the wholesaler generally takes it out of the tub and prints it and sells it to the retailer.
The CHAIRMAN. When it is taken out is it frozen?
Mr. MACK. Absolutely.
The CHAIRMAN. And do you know whether it is kept frozen from that time on?
Mr. MACK. I do not know.
The CHAIRMAN. You do not know how soon it reaches the consumer?
Mr. MACK. No, sir; no way of telling.
The CHAIRMAN. What period elapses between the making of that butter and the time you receive it in cold storage?
Mr. MACK. That I can not tell; the butter experts test it and they determine pretty well how fresh it is.
The CHAIRMAN. You have no knowledge of the history of the butter before it reaches you?
Mr. MACK. No, sir.
The CHAIRMAN. Gather it up in job lots all over the country?
Mr. MACK. Yes, sir.
The CHAIRMAN. Do you buy it?
Mr. MACK. No, sir.
The CHAIRMAN. Do you store it for hire?
Mr. MACK. Yes, sir.
The CHAIRMAN. And charge for the storage?
Mr. MACK. Yes, sir; that necessarily puts a limit on the carrying, because the longer it is carried the larger the cost.
The CHAIRMAN. The charge is based upon the time that it is in storage?

Mr. MACK. Yes, sir.

The CHAIRMAN. And upon the space it occupies?

Mr. MACK. Yes, sir.

The CHAIRMAN. Do you keep that butter in separate cold-storage plants, or is it in cold-storage plants where other things are kept?

Mr. MACK. It is kept in separate rooms, where the air is conditioned so it can be kept sweet.

The CHAIRMAN. Nothing is kept with it?

Mr. MACK. No, sir; nothing is stored in a butter room but butter.

The CHAIRMAN. When you are carrying that for hire, do you inspect the butter?

Mr. MACK. Yes, sir.

The CHAIRMAN. All of it?

Mr. MACK. Yes, sir; and give a receipt for it just as to its condition; if it is bad we refuse it.

The CHAIRMAN Do you date the packages?

Mr. MACK. We date the lots at the time they are received and date the warehouse receipts.

The CHAIRMAN. When you say "lots," you mean you can date the vehicle in which the butter was?

Mr. MACK. No, sir; we enter that on the books and also on the warehouse receipt.

The CHAIRMAN. How do you identify it with the article?

Mr. MACK. By the lot number.

The CHAIRMAN. So that you can tell the date when you received any butter in your warehouse?

Mr. MACK. Yes, sir.

The CHAIRMAN. But you can not give any estimate as to the time the butter had been made prior to receiving it?

Mr. MACK. No, sir.

The CHAIRMAN. And you know nothing of it after it leaves you?

Mr. MACK. No, sir.

The CHAIRMAN. You deliver it in these tubs to the wholesaler?

Mr. MACK. Yes, sir.

The CHAIRMAN. You say you carry it indefinitely; have you carried it for more than a year?

Mr. MACK. A great deal of it.

The CHAIRMAN. More than two years?

Mr. MACK. No, sir; it would eat itself up in the storage charges.

The CHAIRMAN. And you have in your mind no estimate that would approximate the quantities that you carry?

Mr. MACK. Not at this season of the year.

The CHAIRMAN. At any season of the year?

Mr. MACK. No; I do not remember now what the amounts were for last season of the different houses. I will give you all those figures, though.

The CHAIRMAN. Now, do you carry poultry?

Mr. MACK. Yes, sir.

The CHAIRMAN. How long do you carry it?

Mr. MACK. It generally runs a season of from four to six months.

The CHAIRMAN. What season do you receive it in the largest quan tities?

Mr. MACK. Comes in during the spring, and generally along in the summer and in the fall very heavily.

The CHAIRMAN. In the fall?
Mr. MACK. In the fall.
The CHAIRMAN. From where does it come?
Mr. MACK. Shipped from all over the country; mostly from out West.
The CHAIRMAN. What you might call job lots?
Mr. MACK. Large lots; yes, sir; a tremendous amount of dressed poultry; it comes in carload lots.
The CHAIRMAN. In what condition is it when it comes in?
Mr. MACK. Frozen.
The CHAIRMAN. Frozen?
Mr. MACK. Yes, sir.
The CHAIRMAN. It has been in cold storage before, then?
Mr. MACK. Yes, sir.
The CHAIRMAN. And do you know where it was in cold storage before the time that you received it?
Mr. MACK. At the shipping point.
The CHAIRMAN. Do you have any knowledge as to the length of time that it had been in cold storage?
Mr. MACK. No, sir.
The CHAIRMAN. From what States generally does it come?
Mr. MACK. Missouri, I think, is the largest shipper of poultry.
The CHAIRMAN. And it is held there in cold storage and comes to you frozen, does it?
Mr. MACK. Mostly; yes, sir.
The CHAIRMAN. Carload lots?
Mr. MACK. Yes, sir.
The CHAIRMAN. Do you buy it in less than carload lots?
Mr. MACK. No, sir; not at all except by dealers.
The CHAIRMAN. And you know nothing of its history prior to the time you receive it?
Mr. MACK. No, sir; we inspect its condition upon receipt, and if it is in good condition we give a receipt for it accordingly and store it and keep it frozen.
The CHAIRMAN. And you say you carry that how long, a maximum?
Mr. MACK. Seldom for six months; I believe that it would keep indefinitely; I mean by that, several years.
The CHAIRMAN. That is a matter of opinion. Witnesses have given various different kinds of testimony on that subject. Now, do you ever receive poultry back in cold storage after it has been taken out and placed on the market?
Mr. MACK. No, sir.
The CHAIRMAN. Well, that might occur when you are buying from the West.
Mr. MACK. We wouldn't know it.
The CHAIRMAN. You wouldn't know it?
Mr. MACK. No.
The CHAIRMAN. You wouldn't know whether it had been subjected to a thawing process or otherwise?
Mr. MACK. It would have to be frozen again before we would receive it.
The CHAIRMAN. It would have to be frozen again before you would receive it?

Mr. MACK. Yes, sir; and it wouldn't be acceptable under those conditions either; once thawed out, that is enough for it.

The CHAIRMAN. You think that poultry once thawed out——

Mr. MACK. I think it should be sold.

The CHAIRMAN. Should not go back into cold storage?

Mr. MACK. No, sir.

The CHAIRMAN. Is that true of butter?

Mr. MACK. Butter speaks for itself; the butter experts can almost tell the location from where butter comes.

The CHAIRMAN. The opinion of the expert, however, would not reach the consumer. I was inquiring as to the fact. Now, do you know what quantities of poultry you carry?

Mr. MACK. Beg pardon?

The CHAIRMAN. Do you know what quantities of poultry you carry?

Mr. MACK. I haven't the least idea.

The CHAIRMAN. Is there any gentleman here in your party that would know?

Mr. MACK. No, sir.

The CHAIRMAN. Can you give us the figures?

Mr. MACK. I will give you the figures.

The CHAIRMAN. And game?

Mr. MACK. Yes, sir.

The CHAIRMAN. Give us the figures separately, and give it for each month in the year.

Mr. MACK. Yes, sir.

The CHAIRMAN. You buy from many large cold-storage concerns in the West?

Mr. MACK. Don't buy at all.

The CHAIRMAN. Well, do you receive it in large quantities from any particular cold-storage concerns in the West?

Mr. MACK. Poultry?

The CHAIRMAN. Yes.

Mr. MACK. Not any particular ones; no, sir.

The CHAIRMAN. Butter. Do you receive that from any particular storage places in the West?

Mr. MACK. No, sir; we have thousands of shippers.

The CHAIRMAN. A large number of shippers?

Mr. MACK. A large number of shippers.

The CHAIRMAN. They send it to you for storage only, or do you dispose of it for them?

Mr. MACK. For storage only.

The CHAIRMAN. You do not act as commission merchant?

Mr. MACK. No, sir; do no merchandising.

The CHAIRMAN. Do you handle meat and beef?

Mr. MACK. When it is offered. We get very little of it.

The CHAIRMAN. Small meats, such as sheep and pigs?

Mr. MACK. Yes; it is offered in the New York houses sometimes by the hotel keepers and large restaurants. They buy choice cuts when the markets are low and store it for winter use.

The CHAIRMAN. Does it come to you from Chicago?

Mr. MACK. We can not tell where it comes from.

The CHAIRMAN. You do not know where it comes from?

Mr. MACK. No, sir.

The CHAIRMAN. Do not the shipping bills indicate where it comes from?

Mr. MACK. The goods are delivered to us by the owners' wagons; we do not get the bills.

The CHAIRMAN. From the West?

Mr. MACK. We do not know where it comes from; as I say, the hotel people or the large restaurants are the ones that deliver it to us.

The CHAIRMAN. Approximately, how much meat do you carry?

Mr. MACK. That varies, according to the season. At this part of the year we might have probably two rooms filled with meat—not in any very large quantities at any time; we carry considerable pickled meat.

The CHAIRMAN. What quantities?

Mr. MACK. Well, I should say a thousand barrels all the time.

The CHAIRMAN. Can you give a general estimate of the amount you carry?

Mr. MACK. I will give you the exact figures.

There are two points in your bill that I would like to discuss.

The CHAIRMAN. State it briefly.

Mr. MACK. You spoke of tagging merchandise, to determine how long it is in cold storage, and then forbid its being stored for more than one year. The proper handling of cold-storage products would maintain it in wholesome condition for almost an indefinite period, but the trouble with our cold-storage houses is the management haven't learned the scientific way of caring for cold storage.

The CHAIRMAN. That is true on a large scale, is it not?

Mr. MACK. Yes; and on a small scale, too.

The CHAIRMAN. I mean to say that there are a great many houses that have not learned the proper methods.

Mr. MACK. I know very few of them; they all of them aim at temperatures, and temperatures have very little to do with the careful storage of goods. We can carry cold storage, frozen goods, at almost any temperature below freezing, and they will keep just as well.

The CHAIRMAN. Does frozen meat deteriorate?

Mr. MACK. Not if it is carried properly; it will shrink if the room is too dry and will mold if the room is too wet.

The CHAIRMAN. Doesn't poultry deteriorate in cold storage even though it is properly frozen?

Mr. MACK. It can not if it is carried in the condition of air where it will not either dry or mold, and the trouble with the cold-storage people is that they haven't studied the conditions that will keep it from molding or drying.

The CHAIRMAN. That is at the expense of the consumer, it is not?

Mr. MACK. It is at the expense of the consumer, for it shrinks by drying and he loses on it if it is molded.

The CHAIRMAN. The deterioration is at the expense of the consumer, too?

Mr. MACK. Sometimes; if the cold-storage house damages the goods to such an extent that he can recover a reasonable value on it, he may claim a recovery, and all of the cold-storage houses are in the habit of paying a good many claims because they do not understand how to carry the goods.

Senator SMITH. You spoke, Mr. Mack, of certain things, particularly eggs and butter, eating themselves up in storage charges. What are the usual rates per hundred for carrying of eggs and butter?

Mr. MACK. The cost this year is approximately 28 cents a dozen.

The CHAIRMAN. That is 30 dozen to a case?

Mr. MACK. That is hardly profitable.

The CHAIRMAN. That is for 30 dozen?

Mr. MACK. Yes, sir.

The CHAIRMAN. That would be approximately 6 cents a dozen for six months?

Mr. MACK. Yes, sir.

The CHAIRMAN. And what for butter?

Mr. MACK. Butter, according to its weight, and it runs all the way from 50 cents to 30 cents a hundred.

The CHAIRMAN. Is that for six months?

Mr. MACK. That is for a season.

(The committee thereupon, at 12 o'clock meridian, adjourned to Friday, May 27, at 10 o'clock a. m.)

FRIDAY, MAY 27, 1910.

COMMITTEE ON MANUFACTURES,
Friday, May 27, 1910—10 o'clock a. m.

The committee met pursuant to adjournment.

Present: Senators Heyburn (chairman), Gallinger, Oliver, and Smith.

ADDITIONAL TESTIMONY OF MR. FRANK D. MACK, OF NEW YORK CITY.

The CHAIRMAN. Now, proceed, and just limit the argument as much as possible.

Mr. MACK. Mr. Senator, I want to bring before you the conditions of the fish business as handled by the Booth Fisheries Company. We have upwards of 20 fish-freezing plants, and they are maintained entirely for the fish business. The fish are caught, brought to the freezing plants, washed, and frozen within an average time of four hours. They are then dipped, which gives them a glazing of from one-eighth to a half an inch of ice and stored in a temperature of about 12 degrees above zero. The first freezing is at 10 below zero in order to extract from the fish all the animal and latent heat. The dipping, then, after they are frozen in that temperature, freezes the water that comes in contact with them, so it covers them with that glaze.

The CHAIRMAN. I want to ask you in connection with that—the glazing is not done, as I understand it, until after the fish has been thoroughly frozen?

Mr. MACK. It must be, or the glazing wouldn't freeze all the fish.

The CHAIRMAN. In other words, the glazing would act as a casing that would prevent the escape of the gases and things in the fish—in other words, it wouldn't do to hermetically seal them up too soon?

Mr. MACK. A fish is thoroughly frozen at a temperature of 10 degrees below zero before the glazing takes place; then it is glazed to hermetically seal it, and stored in temperatures of from 12 to 18 degrees; we carry that range of 12 to 18 degrees as a matter of safety. Fish must not rise to a temperature of 25 degrees, or it will absorb sufficient heat to soften the oils in it.

The CHAIRMAN. At what temperature does oil freeze?

Mr. MACK. The oil in a fish will run at 26 above zero.

The CHAIRMAN. Does it ever freeze solid?

Mr. MACK. Absolutely.

The CHAIRMAN. When oil freezes solid——

Mr. MACK. It congeals.

The CHAIRMAN. That is not the question; the freezing of oil is in itself a chemical change?

Mr. MACK. And gives off in that chemical change a certain amount of latent heat, and that we extract.

The CHAIRMAN. Now, at what degree does it eliminate the latent heat?

Mr. MACK. At 26 degrees; at the point of congelation. The trouble that has been experienced in carrying fish in cold storage has been that the fish, after properly frozen, properly glazed, have been carried in conditions of air that were too dry, so that the glazing, no matter what the temperature of the room, would evaporate, and then, if the rooms were dry, the moisture in the fish itself would evaporate, so that in instances I have seen fish, as stated yesterday, weigh 6 to 8 pounds that weighed later only 16 ounces.

The CHAIRMAN. Now, how do they restore it to a condition that will allow of its being presented to the purchaser?

Mr. MACK. The fish is not good.

The CHAIRMAN. I want to know the process; how is it done?

Mr. MACK. Soak it in water; but it isn't a food fish.

The CHAIRMAN. That is the process. Now, that is done on a large scale, is it not?

Mr. MACK. The Booth Fisheries Company never did that.

The CHAIRMAN. When you find the bluefish dry, and you might say shad, which, if you eat at hotels and restaurants you doubtless see it frequently—is that the result of it having been kept in too dry a temperature, too dry a condition in the storage?

Mr. MACK. No, sir.

The CHAIRMAN. What does that?

Mr. MACK. Well, I should have to see that fish to explain just what the condition is.

The CHAIRMAN. I think if you will eat it six times, you will get it that way five times out of the six.

Mr. MACK. It has been kept in some condition of air that has affected it.

The CHAIRMAN. It has dried out; there is no longer that juicy, pleasing taste about it.

Mr. MACK. That has been the common evil in most of the cold-storage houses; their rooms are either too dry or too wet.

The CHAIRMAN. You say that has been and is an evil in most of them?

Mr. MACK. Yes, sir. With the Booth Company we have made a particular study in past years to bring the conditions of carrying fish

to perfection as far as possible, and on that account the bill which you have introduced to limit the carrying of fish over one year would work a hardship against the Booth Company, while it would work to the good for companies who do not handle fish as the Booth Company do. The humidities in our fish rooms are carried at such a point so that the glazing will remain on the fish indefinitely, and so long as that glazing remains on the fish it is hermetically sealed forever, and the fish is just as good five years after that glazing is put on as ten minutes.

The CHAIRMAN. You think there is no chemical change in the fiber of the fish so long as it is frozen?

Mr. MACK. And covered with ice; no, sir.

The CHAIRMAN. It must be covered with ice?

Mr. MACK. It must be covered with ice, so that the air can not get to it.

The CHAIRMAN. Now, when they are covered with ice, how are they stacked up or put in boxes and barrels?

Mr. MACK. They are put first in pans and dipped, and in bulk the fish are taken out of the pans and stacked up in bulk.

The CHAIRMAN. Just like wood?

Mr. MACK. Just like so much cord wood. Another way of doing it is to take them out of the pans and pack them in boxes for shipment——

The CHAIRMAN. When you put the glazed fish in there, is the glazing broken at times?

Mr. MACK. Not at all; it is as hard as a rock.

The CHAIRMAN. Doesn't that glazing ever melt or wear off?

Mr. MACK. There is no melting, because the temperature is so low.

The CHAIRMAN. Now, have you been through the fish markets in Washington?

Mr. MACK. No, sir.

The CHAIRMAN. Do you ever go through the fish markets?

Mr. MACK. Very often.

The CHAIRMAN. Have you visited the refrigerating rooms or cold rooms in the fish markets in the city of Washington?

Mr. MACK. No, sir.

The CHAIRMAN. Have you looked into or smelt their fish boxes?

Mr. MACK. No, sir.

The CHAIRMAN. You have in New York, haven't you?

Mr. MACK. Yes, sir.

The CHAIRMAN. I suppose there is no material difference between conditions of different cities in that respect?

Mr. MACK. I should say not.

The CHAIRMAN. What is it that is so offensive, or causes it to be so offensive, when you go into a fish market, the putrid odors that you encounter?

Mr. MACK. That odor that you generally get in a fish market is due in a great measure to the different varieties of fish that are stored in the open temperature, open air, where salt-water fish and fresh-water fish and cured fish and pickled fish are all exposed together. You will notice that that odor is a great deal more noticeable when the temperature is warm; on a cold day when the humidity is up pretty high you can not detect that smell so much.

The CHAIRMAN. Now, you have seen those boxes in which fish are shipped with a rope handle at each end?

Mr. MACK. Yes, sir.

The CHAIRMAN. That is what you call a box; that is what you referred to as a box?

Mr. MACK. No, sir; the Booth Company ship their boxes of fish in wholesale quantities, and they have their regular 100 and 200 pound boxes.

The CHAIRMAN. What is it, a blue painted box?

Mr. MACK. No, sir; a common white wood box.

The CHAIRMAN. I was in the fish markets, giving some attention to this question, and I saw a blue box in which fish comes that was painted with a sort of blue, with a rope handle. That is not the class of box that you referred to?

Mr. MACK. That box is used for traffic purposes, where the fish mongers go to the cold-storage houses and select such fish as they want, and they are put into that box, and for that very reason the question comes up, how are you going to tag those articles when they buy in varieties?

The CHAIRMAN. You can tag your packages. Now, suppose you leave the question of what can not be done after it leaves you for us to take up with the retailer. We want each class to give us a fair and clear idea with regard to their particular connection with these goods.

Mr. MACK. What we want, Mr. Chairman, is a rigid supervision by the Government, and a rigid inspection of the handling of our fish, certified to by them. We do not know as much as we wish we knew how to handle and carry fish. We have studied it hard; we are in advance of other people. We know that. We know that we have determined the condition of our cold-storage room should be better looked after as to humidities than as to temperatures.

The CHAIRMAN. Now, we will come to the question of quantities. Are you prepared for any examination on that?

Mr. MACK. I stated to your clerk this morning that I noticed in reading the minutes that you had on examination Mr. Nickerson, a publisher of ice refrigeration of Chicago and have requested figures from him, and he promised to send you those figures. They will come in the form of a book that is published, giving all the figures.

The CHAIRMAN. The trouble is, that so far as I have had access to that, it is not complete as to what you call private cold storage.

Mr. MACK. Well, my testimony yesterday had reference to what is carried in public cold-storage warehouses.

The CHAIRMAN. But you also have your private cold-storage warehouses?

Mr. MACK. Mr. Warden, who has charge entirely of the fish department, and is general manager of the company, can probably give you all those figures from memory, and he will come before you now.

The CHAIRMAN. I do not know of anything else that we need to question you about. Your testimony yesterday and to-day covers practically all that we desire to get from you.

Mr. FIELD. May I suggest, if the chairman please, that I should like to have Mr. Mack testify as to the method of keeping the records of lots of goods as they come in to cold storage?

The CHAIRMAN. That is all right; testify to that.

Mr. FIELD. We keep records now which are ample and sufficient for any inspection——

The CHAIRMAN. Before you make that statement let me make this suggestion to be a guide in regard to the labeling and the bringing of the knowledge and the facts to the purchaser: The pure-food bill, which was condemned on every ground that this is, and a great many more, and which it was asserted would be destructive of all business enterprise in the country and would close up most of the business, has not fulfilled any of those promises. If we did not have a public officer in the service, the people of the United States would enforce the pure-food law; and we want to get this proposed measure into exactly that position, if possible.

Mr. MACK. The fish that are stored in the warehouses of the Booth Company are carefully recorded as to date they are received, the date they are put in cold storage, the kind, and they are allotted. They keep a careful record and dispose of those fish as fast as they can. It is not economy to hold them in storage any longer than is necessary.

The CHAIRMAN. You are speaking of private or public cold storage, which?

Mr. MACK. That is private cold storage. In the public cold-storage warehouses we have no control. The goods are received and disposed of upon orders from the owner.

The CHAIRMAN. I understand that; you covered that yesterday. You also testified as to poultry and other matters yesterday?

Mr. MACK. Yes, sir.

The CHAIRMAN. Have you anything to add in reference to the quantity of poultry?

Mr. MACK. I will send you all those figures. In speaking about poultry, butter, meat, eggs, etc., as I have said before, what we want is supervision from the Government, expert knowledge, scientific investigations, to teach us how to care for the humidities of our rooms and the condition of our air. When that condition is brought about, we will then not injure the goods.

The CHAIRMAN. Let me make this suggestion now. We are all consumers, and the purpose of this legislation is to protect the consumer in the market, so that he may buy what he considers to be healthful and not be subjected entirely to the opinion of some one else as to what is healthful food. We want to eliminate processes and conditions that bring into the market foods that are objectionable upon presentation and examination of it, and that does not necessarily constitute some inspector as the arbiter of what shall be acceptable to the people.

Mr. MACK. That is wholly in the interests of the consumer.

The CHAIRMAN. He is the one who is entitled to protection.

Mr. MACK. How can he be protected? How can he determine whether the goods which are sold to him come out of the cold-storage warehouse or have been in cold storage thirty days? How will he be protected as to what the quality of those goods are in the cold-storage warehouse where the conditions are not sanitary; where the air conditions are not proper, and where temperatures are not proper.

The CHAIRMAN. Now, bear in mind that we are not here for the purpose of effecting by legislation perfect refrigeration and preserving of goods, and there is not much profit in dealing with processes that do not result in deterioration. We are here to ascertain the facts in regard to deterioration of articles of consumption. Now, we can not deny that a vast quantity of food is perfectly preserved and never

deteriorates and is not obnoxious, either to the consumer or to the dealer; so we will pass that and turn to the part that is not perfect.

Mr. MACK. The main object of the warehouseman in the cold-storage process is to preserve those goods in such condition that he will not have to pay a claim of the owner.

The CHAIRMAN. That is obvious, too. No one wants to spoil the goods. What we want to know is, when goods are spoiled, why are they spoiled?

Mr. MACK. Generally on account of the impure conditions of cold storage.

The CHAIRMAN. Do you know anything about those impure conditions, or imperfect conditions? What makes them objectionable? That is testimony of some value. The other is not. Remarks concerning the perfection of this process or the other is merely advertisement.

Mr. MACK. The carrying of cold-storage goods in impure condition which results in the goods coming out unfit for consumption, is due to the ignorance of the cold-storage warehousemen in this respect.

Take eggs. They are the only live animal that we store. They are the most sensitive. They breed; they have their component parts. An egg is put into cold storage and is carried at a temperature of 32° because that has been adopted by all the cold-storage houses as the proper temperature to carry that egg, so that the white will hold solid and keep the yolk in its proper position. If, however, the warehouseman neglects the conditions of his air and carries his eggs in a temperature of 32° with a humidity around 80 per cent, the egg will collect moisture on its shell and a fungus growth will start and the egg will mold.

On the other hand, if the humidity is only 60 per cent the egg will gradually shrink up and lose some of its moisture and in a short time it will spot. Now, if the warehouseman was educated and was under the guidance of your health board and your scientific bureau and your Department of Agriculture, and was taught to keep his eggs in a room where the humidity was 70 per cent and the temperature 32 per cent, the eggs that came into the warehouse in good condition would remain a very great length of time in a wholesome, edible condition.

The CHAIRMAN. The egg question is pretty well understood, and with the information that you have promised to send us, we will leave that and take up the poultry question for a moment. You have had opportunity to observe the action of cold storage on poultry put in it for various lengths of time. How long have you known it to be in cold storage in quantities?

Mr. MACK. Over two years.

The CHAIRMAN. Does the condition of the air and the temperature vary, and if it does vary, how much?

Mr. MACK. Well, that——

The CHAIRMAN. Now, please give us the facts.

Mr. MACK. The temperature would vary in the room, we will say, 5°.

The CHAIRMAN. How about the humidity?

Mr. MACK. That is the crucial point.

The CHAIRMAN. How much does the humidity vary?

Mr. MACK. We have no way of determining the humidity of the room except by observation of the conditions. In a room where

poultry is carried around 15° above zero, there are no instruments to determine accurately what the humidity of the room is. We determine what our humidities are in certain temperatures by watching the goods. If mold accumulates we know the room is too wet.

The CHAIRMAN. Then it is too late for the benefit of the consumer.

Mr. MACK. That can be observed so that the first sign is detected and the humidity lowered.

The CHAIRMAN. That is when the slime process begins?

Mr. MACK. No; when the mold first settles on the box.

The CHAIRMAN. When it reaches the fowl, as soon as that fowl is subjected to natural conditions it slimes?

Mr. MACK. Yes.

The CHAIRMAN. Inside and out?

Mr. MACK. Well, it does on the outside.

The CHAIRMAN. Well, we have had examples in testimony with reference to the slime after the fowl is opened that has been subjected to such conditions.

Mr. MACK. That is where the temperature of the fowl has been too high.

The CHAIRMAN. That is the kind of testimony we want to get. We will give your concern credit for being capable of doing fine work in refrigerating. There is no doubt about it. But let us get at conditions such as we are endeavoring to correct.

Now, I want to say this: You are not the first witness nor the first gentleman who has come before us and undertaken to defend his own work and to show how perfectly this work can be done. That to a certain extent is valuable and it is always interesting; but it is much more valuable and much more interesting to show bad work. It is the bad work we are after, not the good work, in refrigeration. If you will assist us in correcting bad work we will give you credit for the good work you do, and you will gain by it.

Mr. MACK. The bad work in the cold-storage warehouses is entirely due to the conditions of the air.

The CHAIRMAN. That might change in an hour?

Mr. MACK. Yes, sir.

The CHAIRMAN. So that inspection, unless an inspector was kept right in a room all the time, would not effectively guard against that. Therefore we have to hold the people responsible for the results of the work, so that they will themselves attend to that matter.

Mr. MACK. They would be glad to take that responsibility if you inspect them occasionally and assist them.

The CHAIRMAN. The inspection would not accomplish that, because the inspector might go there during the few minutes when the air was in proper condition, and the mischief would happen when he had been gone an hour. I would like to have you give such testimony as you can as to wherein bad work results and leave the good work to stand for itself.

Mr. MACK. The correction of all these evils in cold storage can be brought about by compelling the cold-storage man to live up to a set of rules and laws that will compel him to keep his air in proper condition.

The CHAIRMAN. What we think is more effective is to hold him responsible for the results. If he does not succeed, let him stand the loss.

Mr. MACK. He suffers now from that cause by having to pay claims of the owners. He does the best he can because he does not know how to do better.

The CHAIRMAN. Then, is it not true that if a man does not know how to conduct a business wherein the public health is involved he should go out of that business?

Mr. MACK. This cold-storage business is something new and we have a lot to learn yet.

The CHAIRMAN. I merely suggest this in order that you may shape your testimony toward the real purpose we have in view. That is why I made the suggestion. It is not my intention to argue these matters; but I felt it only fair to you that you should know the standpoint upon which we are dealing with this question.

Mr. MACK. Give us the hearty cooperation of the Agricultural Department, with inspection and education, and every cold-storage house in this country will bring its efficiency up considerable within a short time, so that the goods they handle will be a great deal better and more wholesome and more to their credit.

STATEMENT OF HARRY R. WARDEN, OF GLEN ELLYN, ILL.

Mr. WARDEN. My personal address is Glen Ellyn, Ill. My business address is the general office of the Booth Fisheries Company, Majestic Building, Chicago.

Mr. FIELD. Let me say, Senator, that Mr. Warden is the general manager of this Booth Fisheries Company and is probably the largest buyer of fresh-water fish in the country that I know of.

The CHAIRMAN. In that event, Mr. Warden, I will commence in the beginning. What quantity of fish are in private cold storage by your company? State generally; and then state by months and years, so that we may have a comparison.

Mr. WARDEN. I can not give you those figures offhand accurately, but I can give them closely.

The CHAIRMAN. Give them as nearly as you can.

Mr. WARDEN. The maximum amount is from nine to fifteen million pounds. It differs with each year.

The CHAIRMAN. It varies at different times of the year, does it?

Mr. WARDEN. Yes, sir; it varies at different times of the year and different years.

The CHAIRMAN. Tell us something as to the time when it varies.

Mr. WARDEN. The maximum quantity is usually on hand during the months of November and December. The minimum quantity is usually on hand during the month of May. The winter season, as you will understand, is a time when inland fish is caught to a very limited extent, owing to the streams and lakes being frozen over. By the time the fresh-fish season opens up, the middle or latter part of April, the frozen fish are pretty well consumed.

The CHAIRMAN. How long are fish kept in cold storage by you?

Mr. WARDEN. I do not recall any fish being kept any time to exceed three years. The average is from six to ten months.

The CHAIRMAN. What quantity of fish would you have in cold storage in excess of two years?

Mr. WARDEN. A very limited amount.

The CHAIRMAN. Could you figure that out?

Mr. WARDEN. Not in pounds; but I do not believe it would be 5 per cent. I think that would be a large estimate.

The CHAIRMAN. Do you keep those separate from the other fish?

Mr. WARDEN. We keep them separate inasmuch as we keep a record of all our fish.

The CHAIRMAN. Are they kept in bins?

Mr. WARDEN. They are kept in separate boxes.

The CHAIRMAN. And you have those boxes dated?

Mr. WARDEN. They are entered by allotment. We do not aim to keep fish any longer than we have to; but sometimes the market conditions are such that it is impossible to prevent keeping the fish in storage.

The CHAIRMAN. You have spoken of the Booth Fish Company. What other companies are you connected with?

Mr. WARDEN. None.

The CHAIRMAN. Have you knowledge as to the condition of the cold storage generally, as to how much it carries?

Mr. WARDEN. You mean general cold storage of all commodities?

The CHAIRMAN. Of fish; and if you can state it, of private cold storage separately? I suppose you keep yourself advised as to conditions in the country.

Mr. WARDEN. I can only do that in a very general way.

The CHAIRMAN. Give it to us then in a general way.

Mr. WARDEN. I do not quite exactly understand what you want, Senator.

The CHAIRMAN. I want to know if you can tell me the quantity of fish carried in storage both by private and by public cold storage in the United States?

Mr. WARDEN. I can not give you that figure within a wide range, because there are no records available.

The CHAIRMAN. Do not large dealers, such as you are, keep in touch with the condition as to the supply and demand?

Mr. WARDEN. Yes; but there are hundreds of small dealers throughout the country who have their individual small storage plants, and it is impossible——

The CHAIRMAN. Give me the benefit of your judgment on the large ones, such as you do know about.

Mr. WARDEN. The total quantity? I can only give a very rough guess. Maybe there is 40,000,000 or 50,000,000 pounds on hand at all times. That would be the maximum.

The CHAIRMAN. You include fresh and salt water fish?

Mr. WARDEN. I think that would include all the fish in the country, both fresh and salt water.

The CHAIRMAN. Now, from your knowledge of the fish business, please give me the maximum length of time that fish are kept in cold storage outside of your own institution.

Mr. WARDEN. I think the practice of other dealers is about the same as our own. None of them keep them any longer than they have to.

The CHAIRMAN. Your company is practically a private cold-storage concern?

Mr. WARDEN. The Booth Fisheries Company operates four private cold-storage houses.

The CHAIRMAN. Where are they?

Mr. WARDEN. Chicago, Detroit, St. Paul, and Minneapolis. In addition we have a number of private cold-storage houses where we simply use our own goods and do not do any storing.

The CHAIRMAN. Where is the headquarters of the Booth Fisheries Company?

Mr. WARDEN. Chicago.

The CHAIRMAN. Is that the Booth Oyster Company too?

Mr. WARDEN. It is the same company.

The CHAIRMAN. What quantity of oysters do you can?

Mr. WARDEN. None.

The CHAIRMAN. There is a Booth Oyster Canning Company?

Mr. WARDEN. Yes, sir; there is such a concern in Baltimore, I believe.

The CHAIRMAN. Is that your firm?

Mr. WARDEN. They do a canning business, but we have no connection with them.

The CHAIRMAN. You carry oysters in cold storage, do you?

Mr. WARDEN. No, sir. Well, now, I will qualify that by saying that we carry oysters temporarily in cold rooms.

The CHAIRMAN. They are not frozen?

Mr. WARDEN. No, sir.

The CHAIRMAN. That has not been demonstrated to be practical as yet?

Mr. WARDEN. I do not believe it has. I do not think there has ever been any experimentation done on that line; not to my knowledge, at least. There are plenty of fresh oysters during the oyster season, and when the hot months come on nobody wants to eat oysters, and there is no reason for carrying them in storage.

The CHAIRMAN. Do your fish products go out more rapidly at one season of the year than another?

Mr. WARDEN. You are speaking of frozen fish?

The CHAIRMAN. Yes.

Mr. WARDEN. Oh, yes.

The CHAIRMAN. What is the season when they go out most rapidly?

Mr. WARDEN. During the winter months and early spring, before the season opens up.

The CHAIRMAN. Are they ever taken out of cold storage and restored again to it?

Mr. WARDEN. No, except possibly by retailers, who might take out more than they could sell and put them back.

The CHAIRMAN. They do that then, do they?

Mr. WARDEN. I think they do on a small scale. I am not conversant enough with the retail business to know.

The CHAIRMAN. No fish are taken back to your place after they have been taken out?

Mr. WARDEN. I do not believe they are. I think that can be qualified by saying in the winter a dealer may take out some and some may be brought back; but I never have heard of any being refrozen.

The CHAIRMAN. Do you know about the poultry business?

Mr. WARDEN. Very little, sir.

The CHAIRMAN. Do you know about meats?

Mr. WARDEN. Very little. Only in a general way.

The CHAIRMAN. You confine your business practically to fish products?

Mr. WARDEN. The most of our business is confined to fish and oyster products.

The CHAIRMAN. How many houses have you in the East?

Mr. WARDEN. We have a house in Philadelphia, one in Baltimore, and one in Boston.

The CHAIRMAN. Have you one in New York?

Mr. WARDEN. We have a small place in New York.

The CHAIRMAN. Do you bring fresh fish from the lakes to your eastern houses?

Mr. WARDEN. Yes, sir; to some extent.

The CHAIRMAN. To a large extent?

Mr. WARDEN. New York absorbs a great many fresh-water fish and the other eastern markets not so much.

The CHAIRMAN. It has been testified to as to the manner of bringing them on. They come on frozen from the lakes.

Mr. WARDEN. That all depends upon the time of the year.

The CHAIRMAN. What time of the year do they not come frozen?

Mr. WARDEN. During the fresh fish season, starting from March 15 up until some time about December 15.

The CHAIRMAN. They come from the western fisheries to the eastern refrigerators without being frozen?

Mr. WARDEN. Yes, sir.

The CHAIRMAN. In what shape?

Mr. WARDEN. Packed in ice and boxes and in cooling cars.

The CHAIRMAN. How many days is the product in transit?

Mr. WARDEN. All the way from one to seven days. It all depends upon the point from which they are shipped.

The CHAIRMAN. Those fish are put in barrels or boxes, iced, and brought on to your eastern freezing houses?

Mr. WARDEN. We freeze no fish in the East. We simply bring them on for fresh consumption.

The CHAIRMAN. You do not freeze any fish in the East?

Mr. WARDEN. We do not. Some of the eastern dealers do.

The CHAIRMAN. You consider your house a western house?

Mr. WARDEN. Ninety per cent of our business is the handling of fresh-water fish, and 90 per cent of the business is in the interior of the country away from the seaboard.

The CHAIRMAN. You handle white fish in quantities?

Mr. WARDEN. Yes, sir.

The CHAIRMAN. Are they frozen shortly after they are caught?

Mr. WARDEN. I understand that only about 10 per cent of all the fresh-water fish handled in the country are handled in frozen condition. None are frozen except surplus stock.

The CHAIRMAN. You did not include your fish that were sold without freezing in the 12,000,000 pounds you mentioned?

Mr. WARDEN. That was frozen fish.

The CHAIRMAN. In giving those estimates as to the quantity, you were giving frozen fish?

Mr. WARDEN. I was giving frozen fish altogether.

The CHAIRMAN. All fish that you handle are in packages of some kind—boxes or barrels?

Mr. WARDEN. Well, yes; except perhaps in a city business where a peddler may drive up with his own wagon. In large cities that is a considerable part of the business.

The CHAIRMAN. There is no inspection at all in your business; no public inspection?

Mr. WARDEN. Well, some cities maintain public inspectors, and there are sometimes condemnations.

The CHAIRMAN. Under local laws; police laws?

Mr. WARDEN. Under local laws; yes, sir.

The CHAIRMAN. I do not think there is anything else I want to ask you, unless there is something additional you want to bring out.

Mr. WARDEN. It might be of some interest to you to show how these fish are handled, and the usual custom in handling them. I want to say that perhaps 90 per cent of the fish that are frozen are frozen as soon as possible in order to keep them in good condition. The average length of time from when the fish is caught to when it is frozen is from three to five hours. Most of the boats carry ice to the fishing ground and most of the fish taken from the water are iced alive. Then they are taken to the fish houses and panned or frozen singly, according to the size of the fish. Then they are put into a temperature of 12 or 15 and kept there for twelve or fifteen days and then are usually taken out and reglazed and given a second dipping.

The CHAIRMAN. I think I made this suggestion when you were present: We are anxious to ascertain the bad methods of handling food products. The men who indulge only in proper handling can be of great assistance in helping us to ascertain the facts regarding bad handling of food products. The newspapers would seem to place you in the position of coming here to antagonize legislation against bad handling of food products. I do not think any of you want to be placed in that position, and yet that is where the newspapers left you.

Mr. WARDEN. That is not the position we are taking.

The CHAIRMAN. It occurred to me that we ought to be able to get very valuable testimony from the high-grade handlers of food products that would enable us to cure the evils than from any other source, and that they ought to be just as anxious to give it as we are to get it. The impression that the newspapers seem to have received and the impression that was sent out is that you are here attacking a measure that is not directed against you at all, because you say you are not satisfied with some of its provisions.

Mr. FIELD. Our attitude is that we wish inspection through the Agricultural Department. We wish the inspection and certificates of inspection to be the criterion, instead of any arbitrary ruling as to the time limit.

The CHAIRMAN. The committee has it in mind that the condition of the thing shall be the criterion and not somebody's certificate, andi f it goes into the market in good shape the certificate neither helps it nor hurts it.

Mr. FIELD. The point we have in mind is this: That in the fish business all fish are frozen at the grounds—possibly 10 per cent of it is not. The complaint of bad fish—this is from our observation—is not on account of the frozen fish, but the fish that comes in so-called fresh.

The CHAIRMAN. Let me interrupt you there. This inquiry is not directed against refrigerating methods.

Mr. FIELD. We understood that that was the line of demarcation.

The CHAIRMAN. Some of the cold-storage men very imprudently sent out through the newspapers an impression that the congressional committee was to investigate the cold-storage men. Our function covers investigation as to the conditions under which food is kept, whether it is kept on ice or not. Now, if you will give us your assistance, you will help us to run down and correct these evils, which every intelligent man believes ought to be controlled. The only proof we desire is the condition of the article when the consumer gets it. Certificates do not make bad meat fresh. There is not the slightest reason for antagonism from any high-grade concern handling food products. They are the ones that ought to be helping to develop and foster the good conditions in connection with this matter, instead of, as some of them are doing, trying to create prejudice against it. I went through all this for some years in the pure-food legislation.

Mr. FIELD. We would be glad to have you let us know what we can do to help you. Now, take the fish that has never gone into cold storage. Of course, there is nothing in this bill that affects that at all. If you are dealing with fresh fish that has never been in cold storage what national legislation can there be that will determine its condition?

The CHAIRMAN. Of course, we are dealing entirely with the shipment of this class of goods in interstate commerce. We deal with them under any circumstances in the District of Columbia or a Territory.

Mr. FIELD. We have most elaborate inspection and regulation of fish in our local board of health—in what we call our local health law in New York.

The CHAIRMAN. In connection with that I would say that you can have regulations as to goods for consumption in your own State but you have not for goods from other States.

Mr. FIELD. That is true.

The CHAIRMAN. Congress has no power to enact police legislation. Now, you can understand that, and if you can give us suggestions—just disregarding the phrasing of the bill; the bill is only a suggestion for legislation—and give us such assistance as you can, and as you testified yesterday in reference to poultry, you will be of great service to us. The main question, first, is to find out whether or not there is a traffic of this kind, and to what extent.

Mr. WARDEN. It would seem to me, Senator, that you are up against a pretty hard proposition. Now, take fish. The majority of bad fish comes into cold-storage houses in this way: The peddler or retail dealer who has two or three thousand pounds of fish sells half of it. He can not sell the other half, and he goes and puts that into cold storage. Now that is a local proposition.

The CHAIRMAN. Now, we will deal with that local proposition wherever that cold-storage house sends out its stock into interstate commerce.

Mr. WARDEN. Then if he escapes local regulation, when the winter comes around, he will send those fish into another State. A large

percentage of the poor fish coming into cold storage arises from conditions of that nature.

The CHAIRMAN. That is a good suggestion. I am glad you made it.

Mr. WARDEN. The Booth Fisheries Company is a reorganized concern. The old company was A. Booth & Co. and failed two years ago. One of the reasons they failed was because they pursued bad business methods.

The CHAIRMAN. Please develop that idea. Let us have some more facts. Why did they fail?

Mr. WARDEN. I say one of the reasons why perhaps they failed was because they did not take care of their stock properly, and thereby accumulated large quantities of poor stuff which they could not sell.

The CHAIRMAN. How did they accumulate it?

Mr. WARDEN. By improper methods.

The CHAIRMAN. What amount of business were they doing then?

Mr. WARDEN. In pounds?

The CHAIRMAN. You can give it in any unit.

Mr. WARDEN. I will say, roughly, a hundred million pounds a year.

The CHAIRMAN. A hundred million pounds a year; and the percentage of bad stock grew so great that it broke them up?

Mr. WARDEN. That is one of the things that helped; that and bad management.

The CHAIRMAN. Now, give us some more of that kind of testimony and you will be of help to us. You say that impure condition of the stock was the result of what condition?

Mr. WARDEN. Of bad management.

The CHAIRMAN. In what way?

Mr. WARDEN. The people at the head of the business were not competent to recognize conditions, and they held their stocks, endeavoring to sell them, until they became poor and bad in storage. Then they had their money tied up there——

The CHAIRMAN. What became of that stock when they failed?

Mr. WARDEN. I came East, from Chicago to New York, about a year and a half ago and took charge of the business under a receiver.

The CHAIRMAN. What became of that stock?

Mr. WARDEN. We sent many carloads of it to the fertilizer factory.

The CHAIRMAN. Was the stock all bad? Did you subject it to the process of inspection?

Mr. WARDEN. We put men into the storehouses and inspected it. We selected what was unfit for food and sent that to the fertilizer factory.

The CHAIRMAN. The rest you sent to the market?

Mr. WARDEN. The rest we sent to the market; yes, sir.

The CHAIRMAN. How long had it been in cold storage?

Mr. WARDEN. Two or three years.

The CHAIRMAN. How much of that did you put on the market?

Mr. WARDEN. I think we disposed of probably a third to a half of it in the way of fertilizer.

The CHAIRMAN. Then you had about 60,000,000 pounds?

Mr. WARDEN. You have the figures wrong, sir. When I said 100,000,000 pounds I meant that their business for an entire year

amounted to that figure. The amount they had on hand when they failed was about 10,000,000 pounds.

The CHAIRMAN. And about how much of it did you send to the fertilizer factory?

Mr. WARDEN. I should say from a third to a fifth of it.

The CHAIRMAN. Then you put six or seven million pounds of this fish on the market. Through what channels did you put it on the market?

Mr. WARDEN. The usual trade channels.

The CHAIRMAN. What year was that sold?

Mr. WARDEN. In September, 1908.

The CHAIRMAN. Did they accumulate any stock after they closed up?

Mr. WARDEN. Very little.

The CHAIRMAN. When did you sell that stock?

Mr. WARDEN. That was sold in the winter of 1908–9.

The CHAIRMAN. Did you bring some of that stock on to New York?

Mr. WARDEN. Practically none went to New York.

The CHAIRMAN. You sold it all in the western markets?

Mr. WARDEN. Well, all over the country.

The CHAIRMAN. And in the fall of 1909 you ceased buying?

Mr. WARDEN. No; that is a misstatement. We did not cease buying.

The CHAIRMAN. You ceased adding to the stock?

Mr. WARDEN. Under the receivership, about the usual methods were pursued in putting up the normal quantity of frozen stock to carry them through the winter; and we figured if this stock was not salable, which we took over under the receivership, we would have to have a supply to carry the business.

The CHAIRMAN. You worked this old stock in as a sort of by-product?

Mr. WARDEN. None of the old stock was sold that was unfit for use. It was inspected and sent to the fertilizer factory. Many thousands of pounds of these fish that went to the fertilizer factory could have been sold for food, but we wanted to clean it up in good shape.

The CHAIRMAN. We want to inquire about the portion of it that went into the market for food.

Mr. WARDEN. There was none that went into the market that was not good food.

The CHAIRMAN. The new firm was organized when?

Mr. WARDEN. About a year ago.

The CHAIRMAN. Did the new firm take over any stock of the old firm?

Mr. WARDEN. What do you mean?

The CHAIRMAN. Any fish that were frozen.

Mr. WARDEN. Very little.

The CHAIRMAN. How much?

Mr. WARDEN. Perhaps two or three million pounds. That was mostly, however, new stock produced that winter in the northwest. The old stocks were practically entirely cleaned up with the exception——

The CHAIRMAN. The new firm, you think, pursues better methods than the old one?

Mr. WARDEN. I am controlling the destinies of that firm, and I am trying to pursue better methods.

The CHAIRMAN. Let us look at our neighbors for a bit—other fish dealers on a large scale. Are they pursuing the same methods that you pursued before the failure of the firm—any of them, or the general average of them?

Mr. WARDEN. As in every trade, there are some people notorious for handling bad stock.

The CHAIRMAN. What is the evil part of their practice now—those that have not reformed?

Mr. WARDEN. As I have told you, when they properly take care of their stock, no bad stock can get into cold storage. It is, of course, otherwise when bad stock unfit for cold storage is put into the warehouse.

The CHAIRMAN. They do that?

Mr. WARDEN. It is done to some extent by some dealers.

The CHAIRMAN. To a pretty large extent, is it not?

Mr. WARDEN. No; I do not think the proportion is great, but as I say, there are always some unscrupulous dealers who will sell anything that is salable that they can get away with.

The CHAIRMAN. Some millions of pounds doubtless get into cold storage in a condition unfit for food?

Mr. WARDEN. I could not say as to the quantity, because I have no means of knowing. I only know the circumstances which come to my observation, and these dealers are not large dealers; they are mostly retailers.

The CHAIRMAN. There are some large dealers, are there not?

Mr. WARDEN. Well, perhaps there is one large dealer who does things of that kind oftener than he should.

The CHAIRMAN. You say some dealers put fish in cold storage in bad condition when they ought to go to the fertilizer instead of the cold storage. Where does that bad condition originate; in whose hands?

Mr. WARDEN. Usually by the handling it receives while in the dealer's possession—improper care on his part.

The CHAIRMAN. What does that improper care consist of?

Mr. WARDEN. Improper icing usually.

The CHAIRMAN. Carelessness?

Mr. WARDEN. If a fish is taken from the water in good condition, put into chill and put in ice and kept there it will keep from three or four to five weeks in good edible condition.

The CHAIRMAN. Without freezing?

Mr. WARDEN. Without freezing; yes, sir.

The CHAIRMAN. So that the cold-storage warehousemen—as I suppose you call them—in handling fish, do not put them in cold storage at all, but just keep them in such shape that they may sell them out to the retail trade?

Mr. WARDEN. Most of the fish is handled in bulk without being kept in cold storage.

The CHAIRMAN. Are they in bad condition sometimes?

Mr. WARDEN. Surely; just the same as you sometimes find bad meat in many retail markets and bad produce on the produce stands.

The CHAIRMAN. You say that is due to bad packing in cold storage sometimes after they have been taken out?

Mr. WARDEN. Not to any great extent.

The CHAIRMAN. Still to some extent?

Mr. WARDEN. It is so small under my observation as to be practically nil.

The CHAIRMAN. Do you know anything about the poultry business?

Mr. WARDEN. Very little; only in a very general way.

The CHAIRMAN. Unless there is something else that you think of, that is all that I desire to ask you.

Mr. FIELD. I should like to have Mr. Warden testify as to the condition of fish frozen promptly, immediately after being caught, as compared to the condition of fish sold in the so-called fresh condition; that is, three or four days after being caught, having been iced—that is, what is known as fresh fish.

The CHAIRMAN. After being iced?

Mr. FIELD. After being iced but not having been frozen. The distinction being between fish freshly caught, freshly frozen and being carried for some time, as compared with so-called fresh fish, which people claim have been caught within a week or so.

Mr. WARDEN. I will say that from my own experience fish in a frozen condition are better to eat and more palatable than so-called fresh fish. I myself have eaten frozen fish over two years old, and I was unable to detect any change in the condition of the fish, or in its tissues.

Mr. FIELD. As compared with a fish caught and iced and kept as is customary from two days to a week, what would you say?

Mr. WARDEN. I would say the cold-storage fish is better and I would personally rather eat a fish kept in that condition and kept a year and a half or two years, than to eat many of the fresh fish sold as fresh fish on the market.

The CHAIRMAN. You would not want to eat any fish caught in the summer and kept over a day, would you?

Mr. WARDEN. Yes, if properly taken care of. You know that fish are anywhere from two to three weeks old when they reach our market. Take a schooner out on the Grand Banks. It is two or three weeks before she arrives at Gloucester. If they are well taken care of, they are in good condition.

The CHAIRMAN. The test is generally by the odor of the fish and its condition?

Mr. WARDEN. The odor of a salt-water fish is harder to distinguish. The salt-water fish has a strong smell. If a salt-water fish were brought to a man in the interior, he would think it had begun to deteriorate when it had not.

The CHAIRMAN. I think that is all the questions I care to ask you. Gentlemen, I want to thank you for the information you have been so kind as to furnish.

(The committee thereupon, at 11.40 a. m., adjourned until Thursday, June 2, 1910, at 10 o'clock a. m.)

THURSDAY, JUNE 2, 1910.

COMMITTEE ON MANUFACTURES,
Thursday, June 2, 1910—10 o'clock a. m.

The committee met pursuant to adjournment.

Present: Senators Heyburn (chairman), Oliver, Gallinger, and Smith.

STATEMENT OF MR. CARLTON D. PRANKARD, OF NEW YORK CITY.

THE CHAIRMAN. Please give your full name to the stenographer.

Mr. PRANKARD. Carlton D. Prankard.

The CHAIRMAN. What is your business?

Mr. PRANKARD. President of the New York Wholesale Fish Dealers' Association.

The CHAIRMAN. Mr. Prankard, we are inquiring something as to the question of storage of food products. Does your interest go beyond that of the storage of fish?

Mr. PRANKARD. No, sir.

The CHAIRMAN. Then confine yourself to that.

Mr. PRANKARD. Fish exclusively.

The CHAIRMAN. Fresh or salted fish?

Mr. PRANKARD. Fresh fish.

The CHAIRMAN. Where are you?

Mr. PRANKARD. The New York Wholesale Fish Dealers' Association is in New York City. It is a corporation, and it takes in about or nearly half of the wholesale fish dealers in New York City. Outside of that I have personal interests in the city of Buffalo and several western cities. My interests there are exclusively fresh-water interests. In New York City, in the Wholesale Fish Dealers' Association, they are salt-water interests.

The CHAIRMAN. Well, let us take up the fresh-water interests first. How do you catch the fish?

Mr. PRANKARD. One point that I am interested in, we catch our fish to a large extent——

The CHAIRMAN. Where is that?

Mr. PRANKARD. At Port Clinton, Ohio. I am the president of the company, and it owns a large fleet of boats and produces a great quantity of fish for market.

The CHAIRMAN. What kind of fish?

Mr. PRANKARD. Fresh-water fish entirely—cod, yellow pike, whitefish, and two or three others.

The CHAIRMAN. Where do you catch them?

Mr. PRANKARD. In Lake Erie.

Mr. FIELD. They have the largest producing plant in the world; I think it is the largest producing plant in the United States.

The CHAIRMAN. You catch those fish in nets?

Mr. PRANKARD. In nets; different weights of nets.

The CHAIRMAN. And do you catch them into open boats?

Mr. PRANKARD. They are taken out of the nets and loaded into the boats.

The CHAIRMAN. Are they brought to the shore in the nets, or are the nets discharged into the boats?

Mr. PRANKARD. The nets are discharged into the boats, and they are iced in the boats.

The CHAIRMAN. How long do those boats stay out?

Mr. PRANKARD. Oh, a very few hours.

The CHAIRMAN. It is all a short transaction?

Mr. PRANKARD. All within the one day.

The CHAIRMAN. The fish are caught and they are on shore within the same day?

Mr. PRANKARD. Within the same day.

The CHAIRMAN. Now, what is the next move of those fish after you get them ashore?

Mr. PRANKARD. They are taken to the fish houses and put on the floor, and put in boxes and smothered with ice so as to get the animal heat out of the fish; they are thoroughly cooled before put in packages to ship.

The CHAIRMAN. What kind of packages do you put them in to ship?

Mr. PRANKARD. It depends on the points to which they are going. If the fish are to be shipped to New York they are invariably put in boxes; the New York trade prefers to have their fish arrive in boxes. Fish going west and southwest are most always packed in barrels.

The CHAIRMAN. Now, what kind of trade do you send them to in New York—wholesale, retail, jobbers, or cold storage?

Mr. PRANKARD. Wholesale only.

The CHAIRMAN. Wholesale?

Mr. PRANKARD. Wholesale only.

The CHAIRMAN. Do you send them to cold storage?

Mr. PRANKARD. No, sir.

The CHAIRMAN. To a freezer?

Mr. PRANKARD. No, sir.

The CHAIRMAN. You send them to wholesale houses?

Mr. PRANKARD. We have a small freezing plant of our own in Port Clinton.

The CHAIRMAN. Now, let me ask you, you are connected with the wholesale association. Now, what do they do with the fish when they get them; do they put them in cold storage?

Mr. PRANKARD. The wholesale association is composed of 15 individual fish dealers. The individual fish dealers, when they want to put goods in cold storage send them to one of the public cold-storage places in New York City.

The CHAIRMAN. What quantity of fish are sent to the public cold-storage places in this system?

Mr. PRANKARD. In New York City, you mean?

The CHAIRMAN. Yes.

Mr. PRANKARD. I can not tell you; there are no figures compiled; there are no statistics kept, so far as I know.

The CHAIRMAN. Can't you estimate it?

Mr. PRANKARD. Yes; in my opinion there may be frozen in New York City in the average year possibly 5,000,000 pounds of fish.

The CHAIRMAN. In your combination?

Mr. PRANKARD. No, sir; I am speaking of the whole fish interests of New York City.

The CHAIRMAN. That is, in what period, now?

Mr. PRANKARD. In an average year.

The CHAIRMAN. Five million pounds?

Mr. PRANKARD. Yes, sir; and if you will allow me to make a further explanation, there are a number of cold-storage plants scattered along the Atlantic coast at producing stations, a number of which have been put up solely to freeze fish in. They are scattered along the Atlantic coast, at Newport, Provincetown, Gloucester, Mass.; Newburyport is another, and I think there are others farther up the Maine coast.

The CHAIRMAN. Now, they freeze what kind of fish?

Mr. PRANKARD. They freeze salt-water fish.

The CHAIRMAN. What quantities of fish are frozen in those establishments?

Mr. PRANKARD. I am unable to tell you.

The CHAIRMAN. Now, have you any cold-storage plants other than the New York City establishments you have spoken of?

Mr. PRANKARD. One of the concerns in which I am interested in Buffalo, N. Y., have their own cold-storage plant for their own use exclusively to freeze fish in.

The CHAIRMAN. On a large scale?

Mr. PRANKARD. It has a capacity of about 100 tons of fish.

The CHAIRMAN. That is a pretty small affair.

Mr. PRANKARD. That is comparatively small; yes, sir. Senator, there are no statistics kept or compiled relative to the fish business in New York City, as far as I know. The fish business of Boston, I think, keeps statistics; I do not know but what they are kept by the Federal Government; they have what is called a "fish bureau" there.

Mr. FIELD. I think Mr. Prankard could give you the relative proportions of fish that are sold fresh and that are stored.

The CHAIRMAN. Well, give us that.

Mr. PRANKARD. I do not know as I could do that, Senator, because there are no statistics kept. The volume of fish sold in New York City is very large.

The CHAIRMAN. What is the maximum time that fish are kept between catching and delivering to the consumer?

Mr. PRANKARD. You refer to fresh fish now, or salt?

The CHAIRMAN. Fresh fish, first.

Mr. PRANKARD. Why, in my opinion—this is my opinion only—I should say three or four days, on the average, between the time they are taken from the water and the time they are on the consumer's table.

The CHAIRMAN. Those are fish not subjected to cold storage?

Mr. PRANKARD. Yes, sir.

The CHAIRMAN. Now, as to cold-storage fish, what is the length of time?

Mr. PRANKARD. In my opinion, again, I should say an average length of time they are kept in cold storage would be from three to nine months.

The CHAIRMAN. Would they run over a season?

Mr. PRANKARD. Yes, sir; I have known them to run over the season.

The CHAIRMAN. Those are the fish that are covered with a glazing of ice, are they?

Mr. PRANKARD. Yes, sir.

The CHAIRMAN. We went into that pretty thoroughly the other day, and I do not think we need touch on it again.

Mr. PRANKARD. From the standpoint of a practical man, I should like to emphasize what Mr. Mack testified to last week—that fish kept in cold storage, under the proper conditions, will remain perfectly wholesome, in my opinion, for a long period of time.

The CHAIRMAN. Well, that would depend somewhat on the manner and completeness of the freezing, would it not?

Mr. PRANKARD. It will depend on the condition of the fish when put in the freezer and the care that is bestowed upon them when they are in the freezer.

The CHAIRMAN. And, in your judgment, don't you think they should be inspected when they come out?

Mr. PRANKARD. They should be inspected. We welcome all inspection.

The CHAIRMAN. Now, since the hearing the other day I have taken some pains to get further information in an informal way. What is there in the proposition that the fish very often, from careless handling, having been perfectly preserved for a long time, the ice glazing is cracked, and the covering of the fish is thus reduced to a condition where the atmosphere gets at the fish itself, and so the deterioration commences in the openings or cracks in the ice glazing. Is that the case?

Mr. PRANKARD. Why, I suppose that is possible.

The CHAIRMAN. Well, now, it was stated to me that that occurs from the rough handling of the fish; that if the fish were allowed to lay perfectly quiet in the packing place it might be all right, but in handling that ice glazing is broken, and then sometimes they are exposed to the atmosphere, through the various processes of handling, and they go to the consumer in a condition where the ice glazing is no longer a protection; the air reaches the fish through the cracks and it comes to the consumer in bad shape. Is that probably true?

Mr. PRANKARD. I can not say that it is. There is seldom any occasion for handling the fish that has been frozen and placed in the cold-storage warehouses until the time that they are taken out. In most cases they are put in boxes, in addition to this coating of ice.

The CHAIRMAN. My opinion is that the process of packing those boxes is with cracked ice, and that that cracked ice itself breaks up the glazing that was on the fish.

Mr. PRANKARD. Let me correct that impression; frozen fish are never packed in cracked ice.

The CHAIRMAN. They are not?

Mr. PRANKARD. No, sir.

The CHAIRMAN. You think the retail dealers do not put them in boxes with ice on them?

Mr. PRANKARD. I don't think so.

The CHAIRMAN. Suppose they have to carry them for a day or two; would they not put ice on them?

Mr. PRANKARD. No. If they are carried over in a temperature below freezing the cracked ice wouldn't keep them from thawing out.

The CHAIRMAN. But is it not true that a very large number of the retail dealers have no facilities of cold storage?

Mr. PRANKARD. That is true.

The CHAIRMAN. I was referring to that. Now, that would reach the consumer in the way I have indicated, because the probabilities are that a large majority of the consumers of fish are poor people who

would buy from small establishments that have no cold-storage facilities.

Mr. PRANKARD. Not necessarily poor people.

The CHAIRMAN. Not necessarily; but there are a good many.

Mr. PRANKARD. Some varieties of fish are a delicacy and the price is such as not to put them within the reach of the ordinary poor person.

The CHAIRMAN. You think the victims of cold storage are to be found among the rich people?

Mr. PRANKARD. No, I don't think that; I don't think there are any victims of cold storage; I do not think cold storage ever has enhanced the value of an article beyond the ordinary carrying charge. The merchants who put their goods in cold storage are satisfied with a very small return on their investment. There is absolutely no competition among the fish interests, and each man, each dealer, who puts his fish in does so as a matter of private speculation and to take care of the trade who look to him for a supply.

The CHAIRMAN. You say there is no competition among fish dealers?

Mr. PRANKARD. No, sir; I meant to say there is no combination.

The CHAIRMAN. There is no combination?

Mr. PRANKARD. There is no combination.

The CHAIRMAN. But there is competition?

Mr. PRANKARD. There is extreme competition.

Mr. FIELD. I would like to bring out, Senator, the profit at which fish are turned over to the wholesalers in the city of New York. I would say that the competition makes it practically an auction business, and the average profit on a pound of fish in the wholesale market is only a fraction of a cent——

Mr. PRANKARD. And in some cases you can not find any profit whatever. If there is any business which has free competition all over the United States, it is this same fish business.

The CHAIRMAN. Will fish stand restoring to cold storage after they have once been taken out?

Mr. PRANKARD. It is not advisable; not if they are salted.

The CHAIRMAN. Well, is it done; I don't mean done by your concerns, but is it done by the smaller dealers?

Mr. PRANKARD. It is not done to my knowledge; I do not believe it is anywhere; fish having been once thawed out are generally sold.

The CHAIRMAN. You say "generally." Now, it is the use of terms like that sometimes that causes many arguments. Make that a definite statement, whether they are or are not?

Mr. PRANKARD. To the best of my belief, I believe they are always sold, and I do not think there are any fish that, having once been thawed out, are refrozen and held in cold storage. In an experinece going over a great many years, I never came across a case of that kind.

The CHAIRMAN. Now, I think we have the fish question pretty well covered.

Mr. FIELD. I would like to add one thing on that point you spoke of that has come under my observation. For a good many years the fish dealers have been trying to make arrangements for a cooled room in the wholesale market so that when they bring the frozen fish from the freezer they can keep them practically in a condition

of cold storage, so that they can handle more fish. As it is now, they only bring out of cold storage what they are sure to sell. The result of it is that they are always under the demand, and if they had cold storage right at the point of handling the fish they would bring a great many more from cold storage, and handle a great many more; but they never bring any more than they are sure they will sell.

Mr. PRANKARD. I would like to bring out this fact, which I do not think has been yet touched upon: In Canada the government encourages the erection of fish-freezing plants. I am quite sure that they pay a bonus of a considerable amount upon every ton of fish that is frozen in those fish freezers. I think the principle behind it is to encourage the erection of these freezers for the purpose of getting frozen bait for the use of the fishermen, but at the same time there are more or less food fish frozen in these freezers.

The CHAIRMAN. You freeze fish for bait, too, don't you?

Mr. PRANKARD. Yes, sir.

The CHAIRMAN. On a large scale?

Mr. PRANKARD. Not on a very large scale in New York City; but it is done on quite a large scale at Provincetown.

In my opinion, if this bill is enacted into law you will work an extreme hardship not only upon the dealer, but upon the consumer of fish.

The CHAIRMAN. You have spoken of inconvenience, but this is the first time you have spoken of hardship. Wherein would it work a hardship upon those you mention?

Mr. PRANKARD. The consumer would have to pay a higher price for his fish.

The CHAIRMAN. But you say you are doing everything now that this bill provides you shall do. Why would it cost anybody more if that is the case?

Mr. PRANKARD. If we were to know that at the end of the year any fish that we had carried over and had not sold had to be thrown away——

The CHAIRMAN. I understood you to say that nine months was the limit.

Mr. PRANKARD. At the same time I told you that there had been cases when fish had been carried over into another year and these fish were perfectly good and edible.

The CHAIRMAN. I asked you about the quantity, and you said there was no considerable quantity. Is the quantity of sufficient importance to represent a question of profit and loss with you?

Mr. PRANKARD. I do not believe that it has been, but there may come times when it will. I think food fishes are becoming scarcer, and I think it might be quite a factor at some time in the future.

The CHAIRMAN. But not now?

Mr. PRANKARD. I do not think it is a very large factor now.

The CHAIRMAN. While we are legislating for the future we have to take present conditions as a basis because we can not know what conditions will be in the future.

Mr. PRANKARD. That is a fact, Senator, and the consumption of fish is on the increase, possibly owing to the increase of population, and the supply of fish is not increasing.

The CHAIRMAN. I do not know how closely you keep in touch with that question, but the statistics show that the supply is increasing.

The Government has established fish hatcheries in most of the States, and the Government sends out many millions of fish in each year. We keep our streams in the West restocked, and there is probably more fish in them now than there ever was before.

Mr. FIELD. But you can not stock the ocean.

The CHAIRMAN. We stocked the Pacific Ocean with shad by putting a few shad into the Sacramento River a few years ago.

Mr. PRANKARD. In opposition to that, Senator, it is within my recollection when shad were produced in very large quantities in the Hudson River. I have seen them brought in and sold at the slips by the boat load and at a price as low as 10 cents apiece. That is a matter of ten or fifteen years ago, and until the last two years Hudson River shad, while not extinct, were very, very scarce. They have come on again in the last year or two.

The CHAIRMAN. That is generally true of all fish. There come periods in all streams when they seem to go away and come back aga in.

Mr. PRANKARD. Because they are mostly caught out. I believe the efforts of the Government are mostly to increase the supply of trout and game fish. They work along those lines more extensively than in other ways. The staple fish in the New York market are not as plentiful as they were a few years ago. That is from my own knowledge.

The CHAIRMAN. That is, ocean fish?

Mr. PRANKARD. Yes, sir; ocean fish.

The CHAIRMAN. Do you still catch bluefish down Barnegat way?

Mr. PRANKARD. Yes, sir; they are caught down off the coast of North Carolina, and from there possibly up to Block Island. That is the range of the feeding ground of bluefish.

The CHAIRMAN. Do they come in the streams at all?

Mr. PRANKARD. No, sir.

The CHAIRMAN. Never enter the streams?

Mr. PRANKARD. Never; except what we call snappers, and they are young bluefish.

The CHAIRMAN. They could be propagated near the mouths of streams debouching into the ocean, as a practical proposition, could they not?

Mr. PRANKARD. I think the bluefish could not be propagated. They are a wild, fierce, ravenous fish; and I do not think they would stand stripping. I do not know about that; it is only my opinion.

Mr. FIELD. Is is not true also, Mr. Prankard, that the supply of halibut and salmon on the Atlantic coast is decreasing very rapidly?

Mr. PRANKARD. There is a very light supply of salmon on the Atlantic coast.

The CHAIRMAN. It always was so, was it not?

Mr. PRANKARD. Years ago there was more produced than now.

The CHAIRMAN. Do you think that was in proportion to the fish, or is it not simply apparent, because there are less people using them?

Mr. PRANKARD. I perhaps am not so thoroughly conversant with the sources of supply to be able to say much about it. It occurs to me that I see less in the market now than I did ten or fifteen years ago.

The CHAIRMAN. The Atlantic salmon is very different from the Pacific coast salmon in its habits?

Mr. FIELD. It is a much superior fish to the Pacific salmon.

The CHAIRMAN. Is a much superior fish to the Pacific salmon?

Mr. FIELD. Yes.

The CHAIRMAN. You would lose on a popular vote on that question. There is nothing equal to the Chinook salmon, in my judgment.

Now, as far as the fish matter is concerned, when we have these tables that are to be furnished, we will close the hearings as to fish. There will be some changes made in this bill. It will be redrawn to fit the testimony and the facts as we find them. We are going to try to insure to the people a decent fish food. That is all. We are not fighting anybody, but we are going to try to make it impossible for men to impose upon the people.

Mr. FIELD. The only way to accomplish that is by the inspection of the condition of the cold-storage warehouses.

The CHAIRMAN. We have heard you very fully on that question. I do not just know what the whole committee will conclude in regard to it, but that will have further consideration. I am going to have this testimony analyzed now so that we can have a report.

(Senator Heyburn submitted the following letter from Mr. Frank D. Mack, giving data asked for by the committee at a previous hearing.)

THE FRANKLIN ENGINEERING COMPANY,
346 Broadway, New York, June 10, 1910.

Hon. W. B. HEYBURN,
Chairman Committee on Manufactures,
United States Senate, Washington, D. C.

DEAR SIR: During the storage season of 1909 and 1910 there were stored in the five cold-storage houses located in New York, Detroit, Chicago, St. Paul, and Minneapolis, the combined capacity of which is approximately 5,000,000 cubic feet, 300,000 cases of eggs for the season beginning April 1, 1909, to January 1, 1910, and all eggs were practically consumed and out of storage by February 1, 1910.

Twenty-two million pounds of butter received about June 1, 1909, and practically all out of storage by May 1, 1910.

Fifteen million pounds of poultry taken in beginning about August 1, 1909, and all out of storage but a very little at this date.

Approximately 6,000,000 pounds of meat stored during last fall and winter and out of storage now.

Fourteen million pounds of fish stored during the season beginning September 1, 1909, and practically all out of storage by April 1, 1910.

These quantities are approximately the same as for the season of 1908 and 1909, and very little if any of the commodities were carried in storage for longer than one year.

The goods are forced into the market to make way for the new crop, which is cheaper than the past season's crop when storage charges are added, and under no ordinary conditions would it be profitable to carry any of the commodities above mentioned beyond the original season in which they were stored.

Sometimes it happens that butter and fish have been carried for a longer period, say twelve months, but even so it has been without harm.

With meat and poultry shrinkage which reduces its weight is so feared by the customers it is always taken out within the limits of the season.

I would be glad to give you any further information possible, and the cold-storage houses are always open for inspection.

Yours, truly, F. D. MACK.

The CHAIRMAN. No appropriation having been made for the expenses of procuring testimony in regard to this subject, the committee is somewhat embarrassed by its inability to secure a certain class of expert and other testimony which would contribute much to the completeness of the investigation. The committee made many requests that parties should testify voluntarily and without expense, but were not always able to secure such service. The following letter will illustrate the general position of those who declined to furnish testimony without having expenses and fees paid:

LABORATORIES OF PATHOLOGY AND BACTERIOLOGY,
Jersey City, N. J., April 28, 1910.

Hon. W. B. HEYBURN,
United States Senate, Washington, D. C.

MY DEAR SENATOR HEYBURN: I beg to acknowledge the receipt of your telegram of the 27th instant asking me to appear before the Committee on Manufactures and give my views relative to time limits of cold storage of foods. My work in this line has been principally in regard to poultry, which results I have already given before our Hudson County (N. J.) grand jury.

As this is expert work, may I ask you if your committee allows fees and incidental expenses to a witness appearing before you in such capacity, for at this time my work would suffer much by my absence, and without reimbursement I can hardly afford to leave town.

Very truly, GEO. E. MCLAUGHLIN, M. D.

BEFORE SUBCOMMITTEE.

The Committee on Manufactures, having heretofore authorized the chairman to proceed as a subcommittee to receive and hear further testimony and statements pertaining to the bill under consideration and report the same to a subsequent meeting of the committee, the chairman as said subcommittee did, on the 7th of July, 1910, proceed to the city of Chicago for the purpose of making further inquiry into the manner and methods of cold storage, and to there meet and confer with representatives of a number of the larger independent concerns, and also with the representative of what is known as the packers, or private cold-storage men. At this time arrangements were made for procuring statements from several concerns in regard to the details of cold storage and to arrange for further meetings.

The chairman, as such subcommittee, returned to Chicago for the purpose of further investigation and consideration of the question on the 9th day of September, 1910, and again held further conference with the representatives of several cold-storage concerns and arranged for further meetings about the 18th of September, and at that time the chairman, by appointment, commenced a series of hearings of those engaged in and representing cold-storage matters, not only in Chicago, but at Mississippi, Missouri River, and other points. These conferences continued throughout a period of about three weeks, during which time a large amount of information was obtained, and, pursuant to arrangements made at the several conferences, the chairman obtained much further valuable information and data, which is herein introduced, as follows:

Mr. W. F. Burrows, representing Libby, McNeill & Libby, Union Stock Yards, Chicago, Ill., has contributed certain data in connection with the consideration of the question of cold storage and has made certain suggestions which are worthy of the consideration of the committee. His communications are as follows:

[Letter from Louis F. Swift to W. F. Burrows.]

CHICAGO, *October 3, 1910.*

MR. W. F. BURROWS,
(LIBBY, MCNEILL & LIBBY),
Union Stock Yards, Chicago.

DEAR SIR: Referring to the cold storage question, I read the following items to Senator Heyburn, and told him that the packers as a whole, I was sure, would favor them, but that I was only speaking authoritatively for Swift & Co.:

1. We do not object to Federal inspection of our cold-storage house as to sanitary condition of the premises or of the goods received and stored therein.
2. We would favor a time limit for cold-storage products and, as far as our company is concerned, could confine ourselves nicely to 12 months.
3. We consider the following products may be carried for the period mentioned without deterioration in a modern cold-storage house: Eggs, 11 months; butter, 15 months; cheese, 18 months; poultry, 1 year; meats, 1 year.
4. We would favor a provision that no cold-storage products when taken out and exhibited for sale should go back into storage.
5. We do not favor reporting daily receipts and withdrawals, as it looks like an unnecessary expense.

6. Also told him we are thoroughly convinced it would be a serious error to attempt to date the goods, because, in the first place, it is impracticable. So much goods is shipped in bulk and so many different assortments go in one small box of, say, 50 pounds, that it would be an endless expense and handicap to the business. Also when the butcher goes to sell the goods you could not confine him to the original package, because there might be an assortment of different kinds of goods that would have to have different kinds of treatment in his store.

We also feel quite sure that it would mislead the public, because some of our meats, when put away in the season of prime quality, would be better even though a month or two older in storage than fresh goods put away that were not of quite as good quality.

I told Senator Heyburn that I was in hopes he would see his way clear to get round this, and that we would have to protest on this to the last ditch.

Senator Heyburn seems a very reasonable man of great business experience, and I think he will be very fair.

Yours, respectfully, LOUIS F. SWIFT.

[Memorandum by W. F. Burrows covering desirable points on cold-storage legislation as it relates to produce.]

First. Every effort should be made with the farmers and producers to have them market and deliver their product in the best possible condition.

Second. After the product has been received from the producer, to handle it quickly under the best possible conditions, getting it quickly into cold storage in prime condition.

Products shipped long distances and offered for sale, or products which have been in cold storage and taken out and exposed for sale, should not be allowed to go into cold storage.

Third. All cold-storage products should be sold during the natural consuming season and during the season when current production is the lightest, and shall not be carried in storage for a period of over one year.

Fourth. Dating of cold-storage products is not practicable owing to the great number of individual pieces, which it is not practicable to date, and dating of each individual piece would be the only effective way to acquaint the consumer with the age of the product. Dating of certain cold-storage products would be misleading and not indicative of the actual merit of the product.

For instance, April eggs are best produced on account of very favorable weather conditions, and on account of their superior quality are marketed the latter part of the consuming season, viz: October, November, and December. May and June eggs are not of as good quality on account of unfavorable weather conditions, and are marketed in the early part of the consuming season, viz: August and September.

Butter produced in June is of the finest quality and is that which is marketed in January and February, while July butter is not so good and is generally marketed first.

[Memorandum.]

Believe it all right to bring out the point that cold storage is a leveler of prices, insuring a fair price to the producer on account of taking care of the surplus during the heavy production and fair prices to the consumer, as it enables the carrying of products from the season of plenty to the season of scarcity.

LIBBY'S METHOD FOR HANDLING CATTLE FROM SEPTEMBER 15 TO JANUARY 15.

We receive the cattle about 48 hours after they are killed and the carcasses are cut up into different parts.

The hind quarters include the round, loin, rump, and flank.

The round is cut into three pieces and made into beef hams.

The loin is sometimes sold as it is, but a large proportion are stripped; that is, the tenderloins, boneless strips, and butts are cut off and sold separately. The bone is taken out of the rump. The flank is also trimmed.

The fore quarters are cut into chucks, shoulder clods, shanks, ribs, and plates.

The chucks are boned out and meat sold for sausage or it is canned.

The shank is mostly boned out and the boneless meat sold to the sausage makers or frozen to be sold later.

A large majority of the ribs are boned out and made into rolls.

The plates are mostly boned out and the meat used for canning.

The shoulder clod is taken off and sold.

From about September 15 to January 15 we do our heavy cutting, that is we handle a large number of cattle and it is impossible to sell all of our cuts, so we deliver to our different branches such cuts as they can sell fresh and the balance are packed immediately, mostly into 100-pound boxes (although some loins and ribs are frozen separately), and they are put into a refrigerator car and shipped to our cold storage, in which they are frozen at a low temperature and kept there until they are sold.

After the 1st to the 15th of January cattle become scarce again and we can not buy sufficient to make cuts to supply our orders. We then commence to draw from our freezers, and continue to do so until we have a larger supply of cattle.

You can appreciate that the longer we have to carry frozen meat the less net returns we get from it, as the storage charges and interest are accumulating all the time. Occasionally we have a year like during the last panic, when travel is not so heavy and people stop eating high-price cuts such as tenderloins, and it was necessary that year to carry a considerable portion of our tenderloins over 12 months, probably some of them 18 months, before we sold them.

We would not object to having a law made forbidding any frozen meats to be carried over 15 months.

We think we handle our frozen meats as well as possible and invite inspection.

W. F. BURROWS.

After several conferences with representatives of the packing-house concerns in Chicago, Ill., it was agreed between the subcommittee and Mr. L. F. Swift, of Swift & Co., Chicago, that the committee should submit in writing a list of the questions regarding which they desired testimony and information. On October 1 your subcommittee received the following letter from Mr. L. F. Swift, on behalf of Swift & Co.:

SWIFT & CO.,
Chicago, October 1, 1910.

Hon. W. B. HEYBURN,
Congress Hotel (Annex), Chicago, Ill.

DEAR SIR: Referring to conversation; I would be pleased to receive your list of questions at your early convenience that I may prepare the answers promptly.

Yours, respectfully,

L. F. SWIFT.

Whereupon your subcommittee replied to the request of Mr. Swift as follows:

CONGRESS HOTEL,
Chicago, Ill., October 4, 1910.

L. F. SWIFT, Esq.,
President Swift & Co.,
Union Stock Yards, Chicago, Ill.

DEAR SIR: Pursuant to our recent conversation relative to the production, storage, and condition of articles of food, I submit the inclosed list of questions which the committee would be very much obliged to you if you would answer as fully as possible from any data which may be available to you.

These questions are not asked in a spirit of prying into your business but for the purpose of obtaining information which the committee deems essential in determining the merits of proposed legislation relative to cold storage and its effect upon the distribution of articles of food and the condition in which these articles of food reach the ultimate consumer during the various stages of business enterprise.

Sincerely, yours,

W. B. HEYBURN.

QUESTIONS IN RE COLD STORAGE.

1. State separately the number of carcasses of beef, veal, mutton, and pork killed during each month and in the aggregate during the year ending June 30, 1910, and where the same were killed, giving also the aggregate quantity by weight of each class.

2. State what proportion of such meats were placed in cold storage, and the minimum, maximum, and average duration of such storage.

3. State if such meats were transferred from the original storage to storage in other places, and state where and how long such products remained in cold storage in such other places.

4. State the quantity of poultry by variety killed during the year ending June 30, 1910, giving such figures by months and in the aggregate. Also state quantity purchased and held in cold storage and time so held and where.

5. State quantity of butter purchased and held in cold storage during the year ending June 30, 1910, and where the same was held and for what period.

6. State quantity of eggs purchased and held in cold storage during the year ending June 30, 1910, and where the same was held and for what period.

7. State the quantity and kind of fruits purchased and held in cold storage for the year ending June 30, 1910, and where the same were held and for what period.

8. State quantity and kind of vegetables purchased and held in cold storage during the year ending June 30, 1910, and where the same were held and for what period.

In giving the above facts please state them by months and in the aggregate.

State experience as to the effect of cold storage upon the character and quality of articles in storage at different periods of storage.

Please state the effect of cold storage upon all such articles stored as to their healthfulness and nutritive qualities.

If you can give corresponding figures as to other concerns than your own the Committee on Manufactures will very much appreciate such information.

In reply to these questions, Swift & Co. responded, on October 10, 1910, as follows:

SWIFT & CO.

Answers to the various questions are as follows:

1. The aggregate number of carcasses and weight of same is as follows:

	Head.	Weight (pounds).
Cattle	1,286,082	700,694,000
Sheep	2,606,120	105,416,000
Calves	498,420	60,959,000
Hogs	3,821,567	620,551,000
Total		1,487,620,000

(Details attached, statement A.)

2. The proportion of the above meats placed in cold storage are as follows:

	Pounds.	Per cent.
Beef	28,760,000	4 1/10
Mutton	1,542,000	1 7/10
Veal	1,093,000	1 1/10
Hogs	13,317,000	2 1/10
Total	44,712,000	3

(Details attached, statement B.)

Duration.—The minimum time in storage is one week; maximum, 1 year to 15 months; average, about 7 months.

3. We ship frozen products East at times to store there, and the total length of time here and East is included in duration in answer to question 2. We never put goods back in freezer after being taken out for sale.

4. The aggregate quantities of poultry for the year:	Pounds.
Killed	11,909,462
Purchased dressed	7,750,167
Total	19,659,629
Placed in cold storage	11,094,266
Per cent	56 4/10

(Details attached, statement C.)

Minimum time in storage, 1 week; maximum, 15 months; average, 7 months.

5. The aggregate quantity of butter purchased, 7,279,930 pounds; the aggregate quantity held in cold storage, 4,009,324 pounds—55 per cent.
Minimum duration in storage, 1 week; maximum, 15 months; average, 7 months.
(Details attached, statement D.)
6. The aggregate quantity of eggs purchased, 12,634,873 dozen; the aggregate quantity held in cold storage, 7,155,318 dozen—56$\frac{6}{10}$ per cent.
Minimum duration in storage, 1 week; maximum, 15 months; average, 7 months.
(Details attached, statement E.)
7. We do not handle fruit.
8. We do not handle vegetables.
We believe goods frozen are not injured in the least and are nearly as good as fresh up to one year. We consider them just as healthful and nutritive when put in freezer when fresh. The large packers put only fresh goods in freezer.

Slaughtering by Swift & Co. at Chicago, six western plants, Jersey City, Harrison, and East Side, New York.

	Beef.		Veal.		Mutton.		Hogs.	
	Number of head.	Dressed weight in 1,000 pounds.	Number of head.	Dressed weight in 1,000 pounds.	Number of head.	Dressed weight in 1,000 pounds.	Number of head.	Dressed weight in 1,000 pounds.
1909.								
July	90,129	50,281	40,943	4,616	194,459	7,436	220,634	35,206
August	99,836	54,758	38,127	4,804	206,250	7,970	203,633	33,288
September	147,656	78,593	57,909	8,259	309,470	12,085	322,309	49,033
October	136,504	70,720	52,771	7,592	278,731	11,083	323,504	47,703
November	117,367	60,655	35,816	5,124	211,936	8,803	343,145	51,573
December	124,992	66,154	39,678	5,856	238,254	10,039	432,359	65,231
1910.								
January	96,678	53,136	27,445	3,788	191,463	7,959	336,234	50,577
February	81,676	45,971	22,473	2,687	185,936	7,646	326,937	53,100
March	106,801	60,267	38,426	4,174	188,382	7,777	333,058	55,099
April	79,827	46,619	39,163	3,620	156,170	6,339	249,421	43,667
May	85,995	48,502	45,159	4,209	185,140	7,778	302,304	55,921
June	118,621	65,038	60,510	6,230	259,929	10,501	428,029	80,153
	1,286,082	700,694	498,420	60,959	2,606,120	105,416	3,821,567	620,551

Meats placed in storage by Swift & Co.

	Beef.		Veal.		Mutton		Hogs.	
	Weight.	Per cent.	Weight.	Per cent.	Weight.	Per cent.	Weight.	Per cent.
1909.	*Pounds.*		*Pounds.*		*Pounds.*		*Pounds.*	
July	597,000	1.2	16,000	0.4	9,000	0.1	549,000	1.5
August	688,000	1.3	14,000	.3	104,000	1.3	527,000	1.6
September	3,138,000	4.0	232,000	2.8	397,000	3.3	1,143,000	2.4
October	6,838,000	9.7	318,000	4.2	559,000	5.0	1,000,000	2.1
November	6,140,000	10.1	265,000	5.2	199,000	2.3	786,000	1.5
December	4,578,000	6.9	43,000	.7	69,000	.7	1,515,000	2.3
1910.								
January	1,014,000	1.9	6,000	.2	21,000	.3	1,248,000	2.4
February	886,000	1.9	6,000	.2	11,000	.1	712,000	1.3
March	1,648,000	2.7	109,000	2.6	12,000	.1	1,834,000	3.3
April	970,000	2.1	2,000	2.1	8,000	.1	969,000	2.2
May	1,210,000	2.5	31,000	.7	21,000	.3	938,000	1.7
June	1,053,000	1.6	51,000	.8	132,000	1.6	2,096,000	2.6
	28,760,000	4.1	1,093,000	1.8	1,542,000	1.46	13,317,000	2.14

Poultry purchased dressed, killed, and proportion placed in storage, 12 months ending June 30, 1910.

	Purchased dressed.	Killed.	Total.	Put in storage.	Per cent into storage.
1909.					
July	245,965	428,616	674,581	326,601	48.4
August	182,445	600,841	783,286	397,016	50.7
September	340,889	1,060,942	1,401,831	712,379	50.8
October	447,064	1,315,773	1,762,837	814,417	46.2
November	948,353	1,763,290	2,711,643	1,458,246	53.8
December	2,458,618	3,925,742	6,384,360	3,270,851	51.2
1910.					
January	1,204,685	978,224	2,182,909	1,548,763	70.9
February	403,449	421,089	824,538	483,250	58.6
March	567,230	287,549	854,779	653,945	76.5
April	513,517	119,568	633,085	624,425	98.7
May	178,437	311,891	490,328	379,898	77.5
June	259,515	695,937	955,452	424,475	44.4
	7,750,167	11,909,462	19,659,629	11,094,266	56.4

Butter purchased and placed in storage, 12 months ending June 30, 1910.

	Purchased.	Put in storage.	Per cent.
1909.	*Pounds.*	*Pounds.*	
July	828,311	393,812	47.5
August	772,740	68,664	8.8
September	657,421	172,573	26.2
October	438,105	259,492	59.4
November	260,465	176,623	67.7
December	300,266	156,979	52.3
1910.			
January	348,060	241,828	69.6
February	306,909	136,151	44.3
March	256,185	26,052	10.3
April	348,504	47,688	13.7
May	828,279	577,107	69.6
June	1,934,685	1,752,355	90.5
	7,279,930	4,009,324	55.1

Eggs purchased and placed in storage, 12 months ending June 30, 1910.

	Purchased.	Put in storage.	Per cent.
1909.	*Dozen.*	*Dozen.*	
July	492,487	36,592	74.1
August	459,476	2,913	.6
September	549,579	60,070	10.9
October	177,356	26,635	15.0
November	99,303	20,863	21.0
December	528,525	145,600	27.5
1910.			
January	705,650	62,299	8.8
February	325,235	27,810	8.2
March	1,870,402	692,236	39.1
April	3,670,624	3,040,697	84.5
May	1,878,910	1,376,792	73.2
June	1,877,326	1,662,811	80.8
	12,634,873	7,155,318	56.8

SULZBERGER & SONS CO.

On November 29 questions in writing covering in general the same ground as those propounded to Swift & Co. were submitted by your subcommittee to Sulzberger & Sons Co., Chicago, Ill., and on December 30, 1910, your subcommittee received the following letter and statement:

CHICAGO, *December 30, 1910.*

W. B. HEYBURN,
Chairman Committee on Manufactures,
United States Senate, Washington, D. C.

DEAR SIR: Answering yours of November 29, with which you inclosed a number of questions which you would like answered, beg to advise as follows:

We inclose herewith an itemized statement of our killing at New York, Chicago, Kansas City, and Portland, for the year ending June 30, 1910, showing all weights, etc., which you request.

2. This statement also shows the proportion of meats placed in cold storage. The length of time these remain would depend entirely upon the market. Beef is usually placed in cold storage in the fall, when the grass cattle come in and beef is cheap, and is taken out during the winter and spring months when none of this class of cattle is available. In any case, it would be taken from the freezer before the next fall, or grass-cattle season.

Pork products are very seldom held in freezer for any great length of time. Sixty to 90 days would probably be a maximum.

3. It is seldom, if ever, that meats are transferred from one cold storage to another, except where meats are first frozen at the plant and sent to some other cold storage on account of lack of sufficient room at the plant to carry the volume required. If this is done, the frozen product is placed in cars and delivered to the other storage in a frozen condition. In no case is it allowed to thaw before re-storing.

4. We kill no poultry of any kind, nor do we purchase or handle this product.

5. We do not purchase or deal in butter.

6. We do not handle eggs.

7. We do not handle fruits of any kind.

8. We do not handle vegetables of any kind.

Our experience as to the effect of cold storage upon the character or quality of meats at different periods of storage is that the change in the quality is little, if any, further than to cause some evaporation of the moisture on the surface, and, to avoid this, small pieces are usually put in boxes so that the moisture evaporation will then be at a minimum. This, of course, varies somewhat with the length of time carried in cold storage. Evaporation, however, after the meats have become solid is very little.

With the above exception, we do not see where the healthful or nutritive qualities are affected in any way by freezing.

We are not in a position to give you figures or experience of others, as we are not conversant with them. If, however, you have any further specific questions you would care to ask us, we will be very pleased to give you any information that we have or can get.

Yours, truly,

SULZBERGER & SONS CO.,
Per C. W. PATTON.

[Statement from Sulzberger & Sons Co.]

Detail of killing at Sulzberger & Sons Co.'s plants for the year ending June 30, 1910.

CATTLE.

Date.	New York.		Chicago.		Kansas City.		Portland.		Total.	
	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.
1909.		*Pounds.*		*Pounds.*		*Pounds.*		*Pounds.*		*Pounds.*
July	8,661	6,409,140	23,030	14,850,145	14,564	8,296,266	500	251,781	46,775	29,807,335
August	10,818	7,843,050	23,890	15,029,516	18,056	9,876,246	486	248,828	53,250	32,997,640
September	12,276	8,961,480	33,439	20,610,457	27,595	14,545,165	717	376,818	74,027	44,493,920
October	10,543	7,590,960	29,757	17,653,100	24,587	12,597,935	621	355,320	65,508	38,197,315
November	8,505	5,783,400	26,469	15,107,265	21,108	10,918,445	573	307,668	56,646	32,116,778
December	13,155	9,208,500	32,203	18,628,322	21,883	12,537,618	796	435,337	68,037	40,812,777

Detail of killing at Sulzberger & Sons Co.'s plants for the year ending June 30, 1910—Con.

CATTLE—Continued.

Date.	New York.		Chicago.		Kansas City.		Portland.		Total.	
	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.
1910.										
January	10,507	7,407,435	27,551	16,306,758	18,464	10,606,187	629	357,014	57,151	34,677,394
February	10,389	7,428,135	24,666	14,317,793	15,881	9,321,471	727	422,731	51,663	31,490,130
March	13,316	9,654,100	27,976	16,523,363	18,380	10,915,421	813	501,773	60,485	37,594,657
April	10,056	7,290,600	24,157	15,103,102	14,691	8,645,445	652	413,650	49,556	31,452,797
May	10,745	7,736,400	23,653	14,799,853	16,162	9,474,025	593	347,250	51,153	32,357,528
June	12,881	9,274,320	27,704	16,908,541	21,241	11,931,946	772	407,361	62,598	38,522,168
Total	131,852	94,587,520	324,486	195,838,218	232,632	129,666,170	7,258	4,073,211	696,849	424,520,439

CALVES.

1909.										
July	2,548	257,348	3,143	271,347	1,605	189,175	83	12,507	7,379	730,377
August	2,073	232,176	4,088	430,112	2,451	313,158	84	12,384	8,696	987,830
September	2,366	264,992	4,531	511,764	3,233	432,810	246	42,753	10,376	1,252,319
October	1,700	193,800	3,357	362,693	1,504	197,542	130	20,125	6,691	774,160
November	1,382	158,930	2,414	240,643	1,246	171,154	22	3,630	5,064	574,357
December	1,660	190,930	3,071	316,795	1,078	157,459	.....	.....	5,809	665,184
1910.										
January	1,091	112,373	2,431	252,178	411	71,479	23	3,580	3,956	439,610
February	1,182	118,200	2,403	235,252	458	83,395	9	2,278	4,052	439,125
March	1,012	204,525	4,964	433,920	795	123,038	8	1,413	6,779	762,896
April	3,504	315,360	8,704	666,108	374	61,409	14	2,288	12,596	1,045,165
May	3,912	367,728	8,498	701,546	452	67,221	14	1,746	12,876	1,138,241
June	4,418	441,800	6,584	578,565	954	131,023	164	23,512	12,120	1,174,900
Total	26,848	2,858,162	54,188	5,000,923	14,561	1,998,863	667	106,091	96,394	9,984,164

SHEEP.

1909.										
July	17,239	638,843	36,173	1,424,146	8,998	330,136	1,448	57,389	63,858	2,450,514
August	15,536	559,296	41,983	1,704,761	10,657	381,175	1,364	53,812	69,440	2,699,044
September	19,418	718,466	49,716	1,973,985	19,671	770,388	1,390	56,389	90,195	3,519,228
October	17,223	654,474	40,558	1,675,414	18,272	693,085	1,252	52,421	77,305	3,075,394
November	20,452	777,176	40,441	1,639,213	10,622	386,839	1,053	40,253	72,568	2,843,481
December	24,415	952,185	49,370	2,009,718	11,045	417,381	1,099	49,861	85,929	3,429,145
1910.										
January	19,650	786,000	37,507	1,524,185	15,765	594,971	1,079	46,643	74,001	2,951,799
February	17,050	682,400	25,854	1,053,672	18,428	703,901	997	41,281	62,339	2,481,254
March	15,575	606,425	25,751	1,084,611	16,415	629,995	808	38,600	58,549	2,359,631
April	15,953	654,073	24,617	1,033,058	12,529	466,466	694	29,672	53,793	2,183,269
May	15,252	625,332	27,736	1,172,329	11,108	417,268	1,092	45,759	55,188	2,260,688
June	22,590	858,420	29,371	1,196,600	11,959	476,001	1,500	55,525	65,420	2,586,546
Total	220,363	8,513,090	428,977	17,491,692	165,469	6,267,606	12,524	515,184	828,585	32,839,993

HOGS.

1909.										
July	.....	.....	31,233	5,171,103	19,476	2,633,329	294	35,989	51,103	7,840,421
August	.....	.....	27,083	4,789,446	19,099	2,560,979	296	43,398	46,478	7,393,823
September	.....	.....	32,602	5,694,850	28,731	4,326,964	287	38,034	61,620	10,059,848
October	.....	.....	30,656	5,122,725	30,757	4,056,497	320	46,823	61,733	9,226,045
November	.....	.....	45,225	7,552,746	39,503	5,411,854	426	64,936	85,154	13,029,536
December	.....	.....	67,428	11,411,152	45,350	6,414,576	458	72,671	113,236	17,898,399
1910.										
January	.....	.....	57,833	9,716,232	42,284	5,956,452	400	59,534	100,517	15,732,218
February	.....	.....	56,022	9,818,526	43,185	6,253,625	525	79,937	99,732	16,152,088
March	.....	.....	43,797	7,623,669	38,457	5,680,216	403	59,629	82,657	13,363,514
April	.....	.....	32,960	5,616,798	23,457	3,450,260	268	43,988	56,685	9,111,046
May	.....	.....	39,810	6,735,818	34,554	5,109,797	330	47,596	74,694	11,893,211
June	.....	.....	52,616	8,686,372	40,104	5,483,646	432	59,336	93,152	14,229,354
Total	.....	.....	517,365	87,939,437	404,957	57,338,195	4,119	605,048	926,761	145,929,503

TO FREEZERS.

	Pounds.
Beef:	
Chicago	3,267,110
Kansas City	4,442,995
Mutton: Chicago	126,500
Hogs:	
Chicago	863,469
Kansas City	1,012,927

	Per cent.
Per cent of production:	
Beef	1.816
Mutton	.385
Hogs	1.286

G. H. HAMMOND CO.

On November 29 your subcommittee submitted to the G. H. Hammond Co., Union Stock Yards, Chicago, Ill., written questions fully covering the questions propounded to Swift & Co., and on December 15, 1910, the following reply and statement was received:

CHICAGO, *December 15, 1910.*

Mr. W. B. HEYBURN,
Chairman Committee on Manufactures,
Washington, D. C.

MY DEAR SIR: I beg to acknowledge receipt of your letter of November 29 with reference to cold-storage business, and I am having statement made up and will endeavor to answer your questions with the very best of our ability, and will forward on to you at an early date

Yours, respectfully,

THE G. H. HAMMOND CO.
S. V. PATTERSON,
Vice President.

CHICAGO, *December 28, 1910.*

Hon. W. B. HEYBURN,
Chairman Committee on Manufactures, Washington, D. C.

DEAR SIR: In accordance with your favor of November 29, we hand you herewith reply to questions in regard to cold storage:

1. Following is a statement of stock killed, year ending June 30, 1910:

	Cattle.		Sheep.		Hogs.		Calves.	
	Number.	Weight.	Number.	Weight.	Number.	Weight.	Number.	Weight.
1909.		*Pounds.*		*Pounds.*		*Pounds.*		*Pounds.*
July	17,374	10,872,072	52,975	1,982,893	26,544	5,006,224	880	94,249
August	17,442	10,779,150	47,000	1,833,728	26,426	4,942,280	994	111,719
September	21,786	13,839,028	50,172	1,932,043	34,407	6,812,920	1,424	190,255
October	20,427	12,254,189	35,075	1,433,695	32,517	6,124,352	1,271	202,889
November	19,121	11,438,734	42,917	1,759,545	31,974	5,709,344	692	111,822
December	21,886	13,007,763	50,994	2,121,812	41,657	7,170,480	771	119,011
1910.								
January	18,034	10,610,127	32,894	1,400,231	29,904	5,147,313	400	65,945
February	15,978	9,020,360	22,873	942,166	23,879	4,334,339	624	74,368
March	19,638	11,158,345	20,335	899,381	28,330	5,200,621	906	111,804
April	15,262	9,356,578	21,404	930,252	18,639	3,430,501	1,199	115,245
May	14,941	9,030,457	24,284	1,059,073	23,350	4,368,776	1,317	124,138
June	20,392	12,050,349	51,281	2,057,370	29,245	5,540,789	1,498	158,410
Total	222,281	133,417,152	452,204	18,352,789	346,872	63,787,939	11,976	1,479,855

2. The following of the above meats were placed in cold storage:

	Weight.	Percentage.
	Pounds.	
Beef	7,337,973	5.5
Mutton	365,587	2
Calves	145,476	9.82
Pork	201,362	.31

The minimum time in storage was three days; maximum, eight months; average, three months.

3. Meats taken from storage for sale are not put back in freezer again.

4. We do not handle poultry.

5. We purchased 204,647 pounds butter. Same was placed in cold storage in Chicago in the months of November and December, 1909, and the last of this was taken out of storage in March, 1910. The minimum time in storage, three days; maximum, four months; average, two months.

6. We do not handle eggs.

7. We do not handle fruit.

8. We do not handle vegetables.

In our opinion meats frozen are not injured in the least as to their healthful and nutritive qualities. We consider a year to 15 months a reasonable time to hold meats in freezer, if strictly fresh when frozen.

Yours, respectfully,

THE G. H. HAMMOND CO.
S. B. PATTERSON, *Vice President.*

On November 29 the chairman of your subcommittee submitted to a prominent packer of Chicago, Ill., a request for information covered by the questions submitted to Swift & Co., and on December 21, 1910, received the following letter and statement:

Chicago, Ill., December 21, 1910.

Senator W. B. HEYBURN,
Chairman Committee on Manufactures, Washington, D. C.

DEAR SIR: I beg to acknowledge receipt of your letter of the 29th ultimo, submitting a list of questions covering certain products handled in connection with cold storage. The information contained herewith is taken from our books and you may rely on same being correct.

First question. We killed stock during the year ended June 30, 1910, as follows:

HOGS.

	Number.	Weight.
		Pounds.
Chicago, Ill.	1,083,599	178,793,835
Kansas City, Kans.	608,720	91,308,000
South Omaha, Nebr.	497,599	82,601,434
Sioux City, Iowa.	406,962	69,183,540
East St. Louis, Ill.	379,649	55,049,105
North Fort Worth, Tex.	347,580	39,971,700

CATTLE.

Chicago, Ill.	346,958	201,235,640
Kansas City, Kans.	263,054	128,896,460
South Omaha, Nebr.	182,642	93,147,420
Sioux City, Iowa.	74,839	38,167,890
East St. Louis, Ill.	178,187	75,729,275
North Fort Worth, Tex.	255,785	115,103,250

SHEEP.

	Number.	Weight.
		Pounds.
Chicago, Ill	912,829	28,328,818
Kansas City, Kans	257,673	10,049,247
South Omaha, Nebr	277,764	11,943,852
Sioux City, Iowa		
East St. Louis, Ill	139,844	5,094,334
North Fort Worth, Tex	40,121	1,725,203

CALVES.

Chicago, Ill	115,633	10,985,135
Kansas City, Kans	46,124	7,379,840
South Omaha, Nebr	9,262	1,620,850
Sioux City, Iowa	2,266	419,210
East St. Louis, Ill	32,029	5,925,365
North Fort Worth, Tex	96,286	15,405,760

Second question. The quantity of meats put in our freezers during the year ended June 30, 1910, was as follows:

	Beef.	Pork.	Mutton.	Veal.
	Pounds.	*Pounds.*	*Pounds.*	*Pounds.*
Chicago, Ill	22,705,338	6,068,906	426,851	551,639
Kansas City, Kans	8,755,027	2,434,868	91,877	55,264
South Omaha, Nebr	4,954,987	2,548,770	97,408	9,789
Sioux City, Iowa	1,235,561	2,898,985	1,532	5,159
East St. Louis, Ill	3,266,172	1,386,100	90,686	90,351
North Fort Worth, Tex	5,628,615	1,831,067	26,689	226,716
Total	46,545,700	16,668,756	745,343	988,918

RECEIVED FROM OUTSIDE.

Chicago, Ill	4,220,179	1,579,794	57,702	295,745
East St. Louis, Ill	312,636			

Our minimum time of storage has been 24 hours, the maximum about 15 months, the average about 7 months.

Third question. We occasionally make transfers from one packing-house freezer to another packing-house freezer of some classes of goods, either on account of inadequate freezer room or to facilitate the filling of orders to be shipped in mixed cars. The length of time transferred stock from one packing house to another is held in storage is very short; when meats leave our packing house they are either sold at time of shipment or are shipped to be sold promptly at the ruling market price at time they reach destination. Our policy is not to put any fresh meats in cold storage after shipments are made from packing-house points.

Fourth question. The quantities of poultry handled by us during the year ending June 30, 1910, aggregate 7,179,162 pounds, as follows:

	Pounds.
Turkeys	1,304,407
Chickens	2,556,625
Fowls	2,613,828
Cocks	419,426
Ducks	113,763
Geese	171,113

Minimum time in storage about 4 days; maximum about 16 months; average time in storage about 6 months.

Fifth question. The quantity of butter handled by us during the year ending June 30, 1910, aggregates 10,395,716 pounds. Minimum time in storage about 4 days; maximum about 16 months; average time of storage about 6 months.

The quantity of cheese handled during the same period was 5,641,708 pounds.

Sixth question. We handled 372,550 cases of eggs during the year ending June 30, 1910. Minimum time in storage about 4 days; maximum about 16 months; average time of storage about 6 months.

Seventh question. We do not handle fresh fruits.

Eighth question. We do not handle vegetables.

I would say in a general way that goods put in the freezers in good condition are not damaged in any way, in my opinion, and are just as good for all purposes as fresh goods up to 12 months.

MORRIS & CO.

On November 29 the same inquiries were made in writing by your subcommittee of Morris & Co., Union Stock Yards, Chicago, Ill., who on December 8 replied as follows and submitted the accompanying statement:

MORRIS & CO.,
Chicago, December 8, 1910.

Senator W. B. HEYBURN,
Chairman Committee on Manufactures,
United States Senate, Washington.

DEAR SIR: Referring to your letter of November 29 and mine of December 2, I am pleased to inclose herewith the information called for in your statement accompanying your letter of the 29th ultimo.

Trusting this will give you the information you require, and soliciting further inquiry from you in the event additional information is wanted, I am,

Yours, truly,

THOS. E. WILSON.

ANSWERS TO QUESTIONS IN RE COLD STORAGE.

DECEMBER 17, 1910.

Questions Nos. 1 and 2. We are attaching a statement which gives the answer to the above two questions in detail.

Question No. 3. We do not transfer any frozen meat from one storage to another.

Question No. 4. We do not kill poultry.

Question No. 5. Seventeen thousand tubs equals 60 per cent, all of which is stored for and used in the manufacture of butterine by us. Minimum time in storage, 10 days; maximum time in storage, 10 months; average, 5 months.

Question No. 6. Twenty thousand cases equal 40 per cent. Minimum time in storage, 10 days (about); maximum time in storage, 9 months; average, 4½ months.

Question No. 7. We do not handle fruits.

Question No. 8. We do not handle vegetables.

Remarks.—We do not think the goods are injured in the least by being held in storage in a frozen condition up to one and one-half years. We do not believe they are in any way injurious to health, always with the understanding that the meats are fresh and absolutely sound when put in freezer. Speaking for Morris & Co., we do not put anything in the freezer except that which is in absolutely A No. 1 condition.

Statement submitted by Morris & Co., Chicago.

CATTLE.

Month.	Killed.					Average weight.	Total weight.	Amount put in cold storage.
	Chicago.	East St. Louis.	St. Joseph.	Kansas City.	Total.			
1909.						*Pounds.*	*Pounds.*	*Pounds.*
July	20,930	16,689	6,525	18,659	62,803	567	35,609,301	427,460
August	20,915	16,492	9,692	19,067	66,166	536	35,464,976	302,900
September	28,615	22,322	12,288	28,709	91,934	517	47,529,878	3,603,300
October	31,843	25,203	11,729	32,768	101,543	488	49,552,984	8,507,000
November	30,677	23,851	11,568	26,445	92,541	489	45,252,549	6,448,700
December	32,954	26,156	10,653	21,855	91,600	486	44,517,600	10,035,300
1910.								
January	21,842	16,320	8,486	18,130	64,778	530	34,332,340	908,200
February	20,168	8,563	8,501	11,196	45,728	568	25,973,504	836,200
March	20,728	10,031	6,748	17,407	54,914	577	31,685,378	501,900
April	19,012	7,686	6,857	13,685	47,240	621	29,336,040	328,300
May	16,765	9,592	5,428	13,560	45,345	586	26,572,170	965,300
June	21,788	17,834	5,250	16,716	61,588	523	32,210,524	704,200
Total	286,237	200,739	101,007	238,197	826,180	530	438,037,244	33,568,700

Per cent in cold storage, 7.66. Time in storage, 10 days to 1½ years; average, 9 months.

SHEEP AND LAMBS.

1909.								
July	44,472	23,513	3,162	8,417	79,834	40	3,193,360	36,900
August	42,319	19,314	6,225	9,458	77,316	39	3,015,324	7,900
September	48,568	13,911	8,178	17,845	88,502	41	3,628,582	16,200
October	51,207	12,246	7,914	17,858	89,225	44	3,925,800	213,700
November	52,154	11,302	4,727	10,429	78,612	42	3,301,704	154,500
December	50,401	14,781	8,039	13,464	86,685	43	3,727,455	95,300
1910.								
January	38,850	14,865	8,377	17,456	79,548	42	3,341,016	51,500
February	29,036	12,232	11,306	17,663	70,237	45	3,160,665	56,100
March	29,592	7,308	8,260	15,135	60,295	44	2,652,980	56,400
April	33,786	7,631	5,715	10,438	57,570	42	2,417,940	283,700
May	33,524	16,125	5,699	14,098	69,446	40	2,777,840	94,600
June	35,901	29,990	3,501	12,584	81,976	39	3,197,064	31,700
Total	490,060	183,218	81,103	164,845	919,246	42	38,339,830	1,098,500

Per cent in cold storage, 2.86.
Time in storage, 10 days to 1½ years; average, 9 months.

CALVES.

1909.								
July	4,171	3,948	723	6,062	14,924	106	1,581,944	6,800
August	3,919	3,554	1,625	4,947	14,045	103	1,446,635	12,600
September	4,814	4,179	2,116	5,372	16,481	105	1,730,505	44,200
October	5,095	5,490	1,750	6,252	18,587	120	2,230,440	45,400
November	3,742	6,335	1,225	4,725	16,027	122	1,955,294	109,200
December	4,084	6,775	1,856	4,065	16,780	118	1,980,040	104,300
1910.								
January	3,854	4,729	1,609	2,010	12,202	110	1,342,220	40,000
February	4,100	1,787	1,614	1,919	9,420	101	951,420	17,900
March	7,912	1,948	1,738	2,628	14,226	79	1,123 854	46,700
April	9,669	665	1,275	1,498	13,107	82	1,074,774	30,300
May	10,823	1,306	1,375	2,381	15,885	80	1,270,800	52,900
June	8,559	2,662	1,307	3,691	16,219	95	1,540,805	46,900
Total	70,742	43,378	18,213	45,570	177,903	102	18,228,731	557,200

Per cent in cold storage, 3.06.
Time in storage, 10 days to 1½ years; average, 9 months.

Statement submitted by Morris & Co., Chicago—Continued.

HOGS.

Month.	Killed.					Average weight.	Total weight.	Amount put in cold storage.
	Chicago.	East St. Louis.	St. Joseph.	Kansas City.	Total.			
1909.						*Pounds.*	*Pounds.*	*Pounds.*
July	29,212	22,833	32,542	18,886	103,473	156	16,141,788	484,200
August	23,019	12,119	23,065	15,515	73,718	164	12,089,752	90,000
September	21,291	19,430	22,385	21,739	84,845	163	13,829,735	26,900
October	29,071	29,083	29,931	32,846	120,931	154	18,623,374	22,200
November	37,431	35,732	36,341	40,413	149,917	152	22,787,384	49,100
December	48,180	40,420	42,822	41,184	172,606	149	25,718,294	86,400
1910.								
January	37,500	24,242	36,068	31,412	129,222	144	18,607,968	204,600
February	30,045	27,443	26,937	25,288	109,713	149	16,347,237	202,600
March	21,439	17,384	23,763	22,126	84,712	157	13,299,784	138,800
April	23,254	17,630	24,889	24,452	90,225	162	14,616,450	160,700
May	30,572	25,894	30,148	29,914	116,528	166	19,343,648	150,000
June	36,600	37,148	30,277	34,533	138,558	172	23,831,976	361,500
Total	367,614	309,358	359,168	338,308	1,374,448	157	215,237,390	1,977,000

Per cent in cold storage, 0.92.
Time in storage, 10 days to 1½ years; average, 9 months.

THE CUDAHY PACKING CO.

Your subcommittee submitted the same questions to the Cudahy Packing Co., of South Omaha, Nebr., and received the following letter, under date of December 6, in response thereto:

SOUTH OMAHA, NEBR., *December 6, 1910.*

Hon. W. B. HEYBURN,
United States Senate, Washington, D. C.

DEAR SIR: Our accounting department and dressed-beef department have received your recent favor requesting certain particulars from us as regards cold storage of meats, etc., which you desire to consider in connection with the Lodge bill on cold storage and certain other similar measures.

We are now engaged in working up the figures, and as soon as possible will transmit same to you.

May we trouble you to send to us a set of the pamphlets containing the testimony already taken before your committee in its consideration of this bill?

Also, as we understand the situation of this bill, the committee agrees that it should be amended so as to define exactly what is meant by "cold storage." In other words, that manufacturing processes which require a cold temperature—as, for instance, the chilling room, where the animal heat is removed from fresh beef, or the sweet-pickle cellars, where pork is cured, and other similar packing-house processes—are not really within the terms of what you mean by "cold storage."

So far as our company is concerned, the great bulk of our products are marketed very shortly after they have been finally finished, and as to them the usual criticism of cold storage—i. e., that by it arbitrarily normal food supplies are withheld from the market and the prices thereby increased—do not apply.

Any suggestions which you could consistently give us with reference to the above would assist us somewhat in knowing just exactly the information which is desired by you on behalf of your committee.

Yours, very truly,

THE CUDAHY PACKING CO.,
THOS. CREIGH, *General Attorney.*

Under date of December 28, 1910, the Cudahy Packing Co. further replied to the questions submitted, as follows:

SOUTH OMAHA, NEBR., *December 28, 1910.*

Hon. W. B. HEYBURN,
United States Senate, Washington, D. C.

DEAR SIR: Supplementing our letter of December 6, we are pleased to hand you, for the private use of your committee, figures showing the volume and details of what may be termed the cold storage portion of our business, in answer to the various questions which you have previously forwarded.

We are glad to note in your letter of December 9 that the bill will be so amended as to leave no doubt regarding the meaning of any term used, and particularly "cold storage."

The difficulty of not knowing exactly what is meant by the term cold storage has confronted us in making up our figures, but it is our understanding that the proper interpretation of the phrase, and the one favored by the committee, is to limit cold storage to the storing of foods which are in their final shape and ready for distribution to the consumer within a reasonable period after being taken out of the storage, and without further processing. Our figures have been made up on this basis and show practically the quantities, etc., in connection with what we packers call "freezer stock" and, in addition thereto, a relatively small quantity of butter and eggs, which we handle in connection with our produce department, which handles oleomargarine and renovated butter and needs the eggs and creamery butter to fill out its line.

As we have hurriedly read the testimony taken before your committee, it has occurred to us that no witness had very clearly explained to you the use of cold storage in connection with the business of a packer of meats.

The hearings were begun, it appears, about the time of the sensational publications of the tremendous cold storage stocks of meats in Jersey City, the figures given being utterly unwarranted. In fact, in one newspaper clipping which came to the writer's attention, it appeared that more carcasses of beef were in cold storage in Jersey City than had been slaughtered and killed under United States inspection in the entire United States in the entire calendar year preceding.

Speaking broadly, the general method in connection with the handling of our products is as follows, and the detailed figures which are shown on the statements which we attach to this letter answer your questions serially.

Our company slaughters hogs, cattle, and sheep. Approximately 10 to 15 per cent by weight of the meat product of hogs is sold fresh, and in the same way about 90 to 95 per cent of the meat product by weight of cattle and sheep is sold fresh.

Immediately after the slaughter of all animals they go from the killing floors to the chill room, which has a temperature of about 45° when the carcass enters, and which gradually is reduced to about 35° when the chilling is finished. This chilling withdraws the animal heat and leaves the fresh meats ready for shipment in refrigerator cars to our various branch houses where, in turn, they are promptly unloaded and put in sales rooms where their temperature is kept around 35° to 40°. Ordinarily fresh meats are kept at a packing house for not to exceed two or three days and they are transported as promptly as possible to destination and are sold as quickly as possible. The ordinary length of time for all sales of fresh meats runs from 5 to 15 days after slaughter. While in a sense all of this handling is in cold storage, nevertheless we take it that this is not what is contemplated by any regulative bill which you may pass, and of course you understand that all of this handling is done under United States inspection.

Of the remaining 85 to 90 per cent of pork, a very small amount is frozen and later sold without having been preserved in any other way, being handled and shipped the same as fresh meat, and the same thing applies to certain other items, as for instance livers and kidneys, etc. The great bulk of the pork meats goes, however, from the chill room after the removal of the animal heat and is further preserved by being cured in dry salt or sweet pickle. Both of these processes are carried on in low temperatures from 35° to 40° and the cure is carried on for a varying length of time, depending upon the season of the year and the quantity of animals which are being received at the stock yards. Of course, also, the general demand for these products influences the length of time which they may remain in cure.

We are most careful always to watch the temperatures in which these meats are kept after they are taken from the curing chill rooms and through all their further processes, because, of course, any deterioration in the meats immediately reflects itself into their market value. We have not considered that any of these processes come within the ideas of your committee as regards "cold storage."

At certain seasons of the year when there is a surplus of live-stock receipts, fresh meats are frozen by us and later taken from storage and used in a further manufacturing process, as, for instance, in the making of sausage, and at other times the surplus trimmings from fresh meats at the time they are being prepared for shipment from the packing house are also frozen, later on to be used in sausage making, etc., when there is either a dearth of other raw material and a consequent increase in value of the fresh meats so that it would not be profitable to use them in sausage, etc.

The temperatures at which we freeze these products varies according to the season. We aim, however, to put them in blocks of about 100 pounds each into what we term a "sharp freezer," at a temperature of about 8°. After they are thoroughly frozen we put them into another room where the temperature is maintained at from 18° to 20°, and we hold them as nearly as possible in this temperature until they are needed.

Our experience in such frozen meats warrants us in saying that meat can be kept at least a year without showing any deterioration in quality. It is seldom, if ever, that we keep it that long.

As regards beef which is not sold fresh, but which is what we call "freezer stock," will state that it is handled about the same way as the trimmings which we have mentioned, and we put beef into the freezer during the fall periods when the receipts of live stock are excessive and later they are sold when receipts are insufficient, during the late winter and early spring months. After leaving cold storage they are of course shipped in refrigerator cars and sold through our branch house "boxes" under the same temperatures as fresh beef, and are all the time under Government inspection. After leaving the chill room this meat does not deteriorate in quality very much differently than fresh meat, or very much more rapidly. For the most part, such beef is special cuts; its appearance shows it to have been frozen; it is sold as such, and you will observe the amount on hand (per statement) June 30.

Generally speaking, we suppose that this freezer stock is about all that would be fairly included within the "cold storage" which is to be regulated, and inasmuch as all the handling of this meat is already under Government inspection, we should should say that its prime condition was pretty well guaranteed without further legislation. If, however, it should be the idea of the committee that the date of entering cold storage should be placed on the meat, and the date when same is removed from cold storage, we would suggest that the Bureau of Animal Industry be called upon for an opinion, for we have all had considerable difficulty in getting a satisfactory method of marking meats so as to secure legibility without spoiling the commercial value of the product by having the ink or other marking material "run."

You will also observe that we have small quantities of butter placed in cold storage, but for your information will say that a very considerable percentage of this is used by us in our manufacture of oleomargarine or of process butter.

If there is any further information which your committee desires, we will be pleased to endeavor to secure it for you, and we trust that our seeming delay in preparing these figures (which has been caused largely by the necessary delays incident to the holiday season) may not have inconvenienced you or the committee.

Yours, very truly,

THE CUDAHY PACKING CO.
THOS. CREIGH, *General Attorney.*

This letter was accompanied by the following statement:

CUDAHY PACKING CO., SOUTH OMAHA, NEBR.

1. State separately the number of carcasses of beef, veal, mutton, and pork killed during each month and in the aggregate during the year ending June 30, 1910, and where the same were killed, giving also the aggregate quantity by weight of each class.

	Beef.		Veal.		Mutton.		Hogs.	
	Number of head.	Dressed weight in 1,000 pounds.	Number of head.	Dressed weight in 1,000 pounds.	Number of head.	Dressed weight in 1,000 pounds.	Number of head.	Dressed weight in 1,000 pounds.
July	42,432	24,498	10,205	1,163	39,965	1,639	127,694	23,005
August	45,825	24,137	10,103	1,308	50,477	2,095	98,457	18,098
September	52,940	27,259	12,301	1,657	61,748	2,528	117,263	20,133
October	70,469	35,132	14,033	1,849	72,649	2,902	137,005	24,282
November	56,253	27,816	9,806	1,319	54,239	2,364	135,951	24,487
December	48,083	25,034	7,625	1,107	69,093	3,032	144,572	24,610
January	39,402	20,935	7,394	1,088	57,338	2,456	143,872	25,151
February	33,858	18,744	5,958	831	56,195	2,370	137,893	23,978
March	32,896	18,466	8,793	1,124	51,540	2,113	103,883	19,285
April	34,824	20,481	5,954	652	46,383	1,846	128,087	23,674
May	36,809	20,972	6,139	678	44,465	1,887	141,295	27,373
June	37,493	20,966	8,080	911	45,403	1,975	185,159	33,184
Total	531,284	284,440	106,391	13,687	649,495	27,207	1,601,131	287,260

The aggregate number of carcasses killed and weight of same is as follows:

	Head.	Dressed weight.
		Pounds.
Cattle	531,284	284,440,000
Sheep	649,495	27,207,000
Calves	106,391	13,687,000
Hogs	1,601,131	287,260,000
Total	2,888,301	612,594,000

The above figures compiled from records of our four packing houses situated at South Omaha, Nebr.; Sioux City, Iowa; Kansas City, Kans.; and Wichita, Kans.

2. State what proportion of such meats were placed in cold storage and the minimum, maximum, and average duration of such storage.

	Beef.		Veal.		Mutton.		Hogs.	
	Weight.	Per cent.	Weight.	Per cent.	Weight.	Per cent.	Weight.	Per cent.
	Pounds.		*Pounds.*		*Pounds.*		*Pounds.*	
July	360,940	1.5	5,774	0.5	1,626	0.1	179,239	0.8
August	466,022	1.9	2,730	0.2	4,113	0.2	131,204	0.7
September	1,083,747	4.0	24,438	1.5	22,776	0.9	149,646	0.7
October	3,262,630	9.3	58,549	3.2	130,964	4.5	320,132	1.3
November	1,972,216	7.1	52,811	4.0	35,368	1.5	74,022	0.3
December	851,634	3.4	5,929	0.5	35,727	1.2	82,143	0.3
January	400,079	1.9	1,485	0.1	346	.....	139,197	0.6
February	183,339	1.0	1,789	0.2	4,275	0.2	167,554	0.7
March	265,028	1.4	7,997	0.7	1,256	0.1	252,482	1.3
April	236,237	1.2	5,398	0.8	2,306	0.1	130,066	0.6
May	294,934	1.4	2,290	0.3	3,680	0.2	159,655	0.6
June	267,809	1.3	1,641	0.2	23,711	1.2	835,923	2.5
Total	9,644,615	3.4	170,837	1.2	266,148	1.0	2,621,263	0.9
On hand June 30, 1910	208,269	.....	481	.....	19,986	.....	1,096,952	.....

The proportion of the total of above meats placed in cold storage is as follows:

	Weight.	Per cent.
Beef	9,644,615	3.4
Mutton	266,148	1.0
Veal	170,837	1.2
Hogs	2,621,263	0.9
Total	12,702,863	2.1

Duration: The minimum time in storage is 3 days; maximum, 13 months; average, 5 months.

3. State if such meats were transferred from the original storage to storage in other places, and state where and how long such products remained in cold storage in such other place?

Answer. No frozen meats, after once being taken out of the freezer and thawed, have been again returned into the freezer. All frozen meats thawed have been transported and sold under refrigeration.

4. State the quantity of poultry by variety killed during the year ending June 30, 1910, giving such figures by months and in the aggregate? Also state quantity purchased and held in cold storage and time so held, and where?

Answer. We handle no poultry.

5. State quantity of butter purchased and held in cold storage during the year ending June 30, 1910, and where the same was held and for what period?

Purchased—	Weight.
July	134,296
August	36,656
September	216,125
October	205,996
November	11,174
December	13,173
January	9,684
February	26,843
March	14,695
April	11,584
May	24,415
June	310,857
Total	1,015,498

Stored at—	
South Omaha, Nebr	194,852
Omaha, Nebr	244,924
Lincoln, Nebr	105,043
Sioux City, Iowa	101,461
Kansas City, Kans	180,596
Topeka, Kans	22,065
Emporia, Kans	19,885
Eureka, Kans	31,031
Chicago, Ill	59,812
San Francisco, Cal	35,039
Los Angeles, Cal	20,790
Total	1,015,498

Of the above, a very considerable proportion, from 35 to 50 per cent, was used by us in the manufacture of oleomargarine or process butter. Our records are not in such shape that we can determine actually just the disposition that was made of each lot of butter after it left cold storage, or the exact source (as regards cold storage stock) of butter used in manufacturing processes.

6. State quantity of eggs purchased and held in cold storage during the year ending June 30, 1910, and where the same was held, and for what period.

Purchased—	Cases.
July	43
August	30
September	22
October	148
November	561
December	575
January	301
February	14
March	530
April	3,264
May	1,507
June	1,170
Total	8,165

Stored at—	
South Omaha, Nebr	497
Sioux City, Iowa	2,486
Emporia, Kans	400
Winfield, Kans	2,000
Portland, Oreg	800
San Francisco, Cal	1,882
Petaluma, Cal	100
Total	8,165

7. State the quantity and kind of fruits purchased and held in cold storage for the year ending June 30, 1910, and where the same were held and for what period.

Answer. No fruits handled by us.

8. State quantity and kind of vegetables purchased and held in cold storage during the year ending June 30, 1910, and where the same were held and for what period.

Answer. No vegetables handled by us.

Remarks.—As regards the effect of cold storage, according to our experience, will state that we believe meats can be frozen and kept indefinitely without deterioration and consumed without detriment, provided that after leaving cold storage they receive ordinary handling at the usual temperatures for handling fresh meats and are consumed within approximately the same time as fresh meat after removal from chill rooms. However, as regards such frozen meats which have once been thawed, there might be some question as to their deterioration if they should again be returned into the freezer. This is never done by our company, and we believe is rare in the trade.

Our views are supported by the observations and authorities cited in the recent bulletin of the Bureau of Chemistry on the subject of cold storage of poultry and its effect.

On the subject of cold storage generally an interesting authority advocating its merits is the report of the dairy and cold storage commissioner of Canada for the fiscal year ending March 31, being an appendix to the report of the minister of agriculture.

It is to be noted that Canada seeks to foster the cold-storage industry and has a law giving bonuses for the construction of buildings properly equipped.

MADISON COOPER CO.

Your subcommittee has had some valuable correspondence with the Madison Cooper Co., refrigerating engineers and architects, of Watertown, N. Y., in the form of letters, which are as follows:

MADISON COOPER CO.,
REFRIGERATING ENGINEERS AND ARCHITECTS,
Watertown, N. Y., November 7, 1910.

WELDON B. HEYBURN, *Wallace, Idaho.*

DEAR SIR: Your attention is requested to what I believe to be the facts in connection with the proposed regulation of the cold storage of perishable goods and possibly limiting the storage period.

Cold storage plant owners or operators would, it is thought, welcome and not reject any reasonable supervision. This I know to be true of the larger cold-storage enterprises and those who are operating on what may be called a commerical cold-storage basis—the storing of goods for others. As the greater portion of the business is handled in commercial cold stores, anything applying to them might be made to apply to those who cold store on their own account.

There are very few goods indeed which need to be carried more than a few months under refrigeration, and with very few exceptions none whatever longer than a year. Any limitation of cold-storage period should take into consideration the character of the goods. Some goods can not be stored for more than a few months at most, and eggs, for instance, can not be successfully stored in the shell longer than six to eight months. Limiting the storage period of these goods, therefore, would be of very little service toward preventing abuses, if abuses exist.

An inspection which would guarantee the quality of goods when placed in cold storage would be far more effective in protecting the public than would any regulation as to time of storage. It is a fact that the bad impression created against cold-storage goods is largely on account of the fact that goods are not placed in storage at the right time, but held longer than they should be and cold stored as a last resort. In this way cold storage bears a burden which it is not responsible for.

It has been proposed to require the branding of goods which have been held in cold storage. Is it possible to determine what constitutes cold storage? A temperature which would be considered cold storage during the summer and which would require artificial refrigeration would be only protection against frost or plain storage during the winter, and without any artificial refrigeration whatever. This being the case, it would seem practically impossible to determine what cold storage consisted of, and as a practical produce handler of some years' experience, I should say that there is no person competent to tell whether some classes of goods had been in storage or not. There are, in fact, certain kinds of goods which require cold storage from the very

first. Butter, for instance, can not be handled without refrigeration. The same is more or less true of eggs, poultry, meats, etc.

The injustice of compelling the branding of goods which had been under refrigeration wholly on account of popular prejudice is apparent to one who is familiar with the perishable-goods business, and the necessity of refrigeration for the successful handling of many different kinds of perishable goods would make it appear that legislation along this line is undesirable. It is my opinion that it would be very easy to show by the most experienced and skillful operators and producers of perishable goods that it is impossible to successfully handle such goods during the heated period without refrigeration. It will be difficult to discriminate between the temporary holding in an ordinary ice refrigerator and the longer period holding in the so-called cold-storage house, for the reason that there is no distinct line between the two, and with the ordinary household refrigerator at one extreme and the multimillion cubic foot cold-storage house at the other, there is between these two many different capacities and kinds of cold-storage plants.

It would, I believe, be very easy to prove to the satisfaction of any well-informed and fair-minded person that legislation tending to interfere with the practical application of cold storage in handling perishable food products would be an interference with the legitimate trade and the personal rights of the dealer in such goods. This being the case, a measure of this kind could not become an enforceable law.

Having had more than 20 years' experience in the handling of many different classes of perishable goods and in the operation of cold-storage plants and in the design and construction of same, I can, perhaps, claim some knowledge of this subject as it bears on the economy and conservation of perishable products which are used for food.

This letter is written with no other object in mind than to show up the facts of the case, and I would be very glad to answer any questions and furnish further information if desired.

Very truly, yours,

MADISON COOPER.

MADISON COOPER CO.,
REFRIGERATING ENGINEERS AND ARCHITECTS,
Watertown, N. Y., December 12, 1910.

Hon. WELDON B. HEYBURN,
Stoneleigh Court, Washington, D. C.

DEAR SIR: I am inclosing herewith marked copies of October and November Cold, to which I would call your attention. It is my understanding that you have charge of the proposed pending cold-storage legislation, and there are some points in the two articles marked which may interest you.

The writer has been connected with the perishable-goods business for upward of 20 years and has had a hand in the designing of more than 100 different cold-storage plants; a couple of these are in your State, and we have work in practically every State in the Union. My experience is not only in the designing of cold-storage apparatus, but in the actual handling of perishable goods, and I am anxious that you should act with a full knowledge of the facts in connection with the proposed legislation.

Very truly, yours,

MADISON COOPER.

[Extract from Cold, October, 1910.]

QUESTIONS RELATING TO PROPOSED GOVERNMENTAL REGULATION OF COLD-STORAGE WAREHOUSES.

In order to give the Senate Committee on Manufactures reliable information direct from the cold-storage interests, the American Association of Refrigeration has submitted to some of the cold-storage warehouses of this country a set of questions which relate to the general question of supervision, restriction, and regulation of warehouses for the cold storage of food products.

As the editor has had considerable experience in the practical handling of perishable goods commercially and in cold storage, and has visited a large number of cold-storage houses in his capacity as refrigerating engineer, he ventures to discuss these questions from a practical standpoint, as follows:

"1. Do you object, on any ground, to Federal inspection of your cold-storage house, as to the sanitary condition of the premises, or of the goods received and stored therein?"

There certainly should be no objection to Federal inspection of the right kind. Every cold-storage warehouseman who deserves consideration certainly keeps or

hould keep his house in a sanitary and clean condition. It is to the warehouseman's interest that the goods received should be in first-class condition, and any inspection which will help him to get good quality into his cold rooms will be an assistance. The warehouseman is also anxious that goods should be removed when they begin to show deterioration, and if inspection will help him to have goods removed when they are beginning to deteriorate he will welcome such inspection.

"2. If a time limit for storage is inevitable, what is the shortest period that you think could be enforced as to all commodities stored, without serious detriment to the cold-storage business?"

This question is not a very practical one and might as well have been omitted. Some goods can not be stored more than a few weeks at a time anyway, while others may be stored upward of a year without detriment.

"3. Would you favor a time limit with a provision for inspection at its expiration and a renewal of the storage period for such goods as are found sound?"

It is hardly expected that any experienced handler of perishable goods will favor a time limit unless it be long enough to cover the extreme life of a particular class of goods. The practicability of a reinspection at the expiration of a possible time limit does not look very reasonable. It would be more practicable to put the extreme time limit on the particular commodity to be stored, the time limit necessarily varying with the character of the goods.

"4. What period would you favor for such extension or extensions?"

If a time limit is really inevitable and this time limit were made shorter than the natural life of the particular commodity in question, it would be necessary that the period for extension should be made of a length corresponding to the natural life of the particular commodity.

"5. If a single arbitrary time limit for all goods is not practicable in your judgment, then what are the shortest time limits you would suggest for each of the following staple cold-storage commodities: Eggs, butter, cheese, poultry, fish, meats, apples, vegetables, citrus fruits, dried fruits?"

We are not going to put ourselves on record and we are of the opinion that very few cold-storage warehousemen will put themselves on record as to an arbitrary time limit for the products mentioned. There are really too many factors influencing this problem to make it practicable. Eggs can hardly be stored more than a year, and cheese hardly more than 18 months, while poultry, fish, and dried fruits have no ascertained limit of life if properly handled and properly stored. The same is more or less true of meats, while apples and vegetables are both of entirely too variable a quantity to be classed together.

"6. To enable us to offer corroborative evidence on the subject, will you give us such correct data as you may have relative to the length of time the different usual commodities may be stored without deterioration under conditions now prevailing in modern storage houses?"

It will not be possible from actual records to answer this question, as very few warehousemen, if any, have made the actual test of the length of time that goods may be stored as a possible limit. The words "without deterioration" have no place in this question, as it is well known that there are very few goods which can be cold-stored for any considerable length of time without a certain amount of deterioration.

"7. Would you favor a provision that no food products once taken from cold storage and exhibited for sale shall go back into cold storage? If you are opposed to this feature, please state reasons."

Here is another question which is not practical. A provision to prevent storage the second time would seem unnecessary, and there are many cases where it would be advisable and, in fact, absolutely necessary to re-store goods, as, for instance, when they are shipped from one market to another.

"8. Do you oppose labeling articles carried in cold storage, or the packages containing them, with the date of their entry into and their withdrawal from storage? If so, why?"

The labeling of articles carried in cold storage is not reasonable on the face of it, and it is our opinion that no useful purpose could possibly be served by such label. Quality must speak for itself at all times and the labeling would be prejudicial in the eyes of the public, even though the quality were better than goods which had never been in cold storage.

"9. If labeling or marking on entry into storage were compulsory, what, in your judgment, would be a practical mode of labeling or marking the following articles for identification by the purchaser at retail, as to the time such articles were carried in storage: Eggs, butter, cheese, poultry, fish, meats, apples, vegetables, citrus fruits, dried fruits?"

Suggestions as to the detail of labeling take the nature of a practical or mechanical problem rather than a trade or scientific problem and are an after consideration anyway.

"10. Would you favor provision for the infliction of heavy penalties for the removal of marks or labels and the failure to carry them forward to the consumer?"

If a law is passed along the lines above, we are certainly in favor of a heavy penalty for violation of same. Penalties in general are not heavy enough for the violation of law.

"11. Would you favor monthly reports to the Government for publication of the daily receipts and withdrawals of produce at cold-storage warehouses to allay the suspicion that goods are concealed to enhance prices?"

Here is a suggestion which all broad-gauged cold-storage warehousemen will agree to. There are, in fact, but a very few who will oppose the idea of informing the public what they have in cold storage. There is no secret about the cold-storage business. It is a legitimate proposition, pure and simple, and there is no use of making a secret of it anywhere or at any time.

[Extract from Cold, Nov., 1910.]

WHAT IS COLD STORAGE?

What is cold storage anyway? Some people seem to think that there is some mystery about it and that goods placed in cold storage must necessarily be stale and inferior when removed. This argument is used when it is desired to run down the quality of goods coming from cold storage. On the other hand, the argument is used that in order to control prices and markets, goods are placed in cold storage where they may be kept indefinitely or until the prices are right for selling. Cold storage is really a simple thing so far as its general effect is concerned. Goods placed in cold storage are usually held at as low a temperature as they will stand without freezing or damage, and generally speaking a temperature of 30° F. to 32° F., which is about the freezing point of water, is used. A few goods are carried lower and a few higher, but more than three-fourths of the products which are cold stored are carried at about 30° F. In the summer this temperature means cold storage; in the winter what does it mean? It means simply frost-proof storage, as no refrigeration is needed in the North for the maintaining of this temperature. How then are we to discriminate between the cold storage warehouseman and the frost-proof warehouseman, and is there any real difference in their business? Cold storage in summer is really frost-proof storage in winter. Every man's cellar is a cold-storage house in the winter time and he regulates the temperature of same by opening the windows more or less. What is a cold-storage house anyway? Let somebody who is smart enough answer this question, and let the people who propose to legislate for the regulation of cold storage determine what it is, before they pass dead-letter laws. It really does not look to a disinterested person as though a law along the line suggested above would be enforceable from the fact that the term, "cold storage" can not be defined. If any such law were passed it would affect not only the big city cold-storage house, but every man who had a little fruit or a few vegetables in his cellar which he might wish to sell. The proposed law really takes the form of an absurdity.

Unfit foods may be condemned wherever found and ample laws are already on the books to this end. Why then legislate to regulate cold storage?

MADISON COOPER CO.,
REFRIGERATING ENGINEERS AND ARCHITECTS,
Watertown, N. Y., January 3, 1911.

HON. W. B. HEYBURN,
United States Senate, Washington, D. C.

DEAR SIR: Your favor of the 16th ultimo, acknowledging receipt of our letter with inclosures, is to hand. There are one or two points in particular which from a good practical standpoint I would call your attention.

The first is the proposed requirement of inspection of goods for cold storage. There are hundreds of small cold-storage plants throughout the country ranging in capacity from a single small room, perhaps 10 feet square, up to say 25 or 30 carloads capacity. The impossibility of inspection for these small fellows is apparent, and so far as I can see any law which would require inspection before storage would put them out of business. These little fellows, as a matter of fact, need inspection far less than the big ones, and if it is seriously proposed to require inspection of food products before cold storing same, inspection must be made in every individual plant. If, however, the inspection requirement is limited to the storage of goods for other people, this will answer, I believe.

hould keep his house in a sanitary and clean condition. It is to the warehouseman's interest that the goods received should be in first-class condition, and any inspection which will help him to get good quality into his cold rooms will be an assistance. The warehouseman is also anxious that goods should be removed when they begin to show deterioration, and if inspection will help him to have goods removed when they are beginning to deteriorate he will welcome such inspection.

"2. If a time limit for storage is inevitable, what is the shortest period that you think could be enforced as to all commodities stored, without serious detriment to the cold-storage business?"

This question is not a very practical one and might as well have been omitted. Some goods can not be stored more than a few weeks at a time anyway, while others may be stored upward of a year without detriment.

"3. Would you favor a time limit with a provision for inspection at its expiration and a renewal of the storage period for such goods as are found sound?"

It is hardly expected that any experienced handler of perishable goods will favor a time limit unless it be long enough to cover the extreme life of a particular class of goods. The practicability of a reinspection at the expiration of a possible time limit does not look very reasonable. It would be more practicable to put the extreme time limit on the particular commodity to be stored, the time limit necessarily varying with the character of the goods.

"4. What period would you favor for such extension or extensions?"

If a time limit is really inevitable and this time limit were made shorter than the natural life of the particular commodity in question, it would be necessary that the period for extension should be made of a length corresponding to the natural life of the particular commodity.

"5. If a single arbitrary time limit for all goods is not practicable in your judgment, then what are the shortest time limits you would suggest for each of the following staple cold-storage commodities: Eggs, butter, cheese, poultry, fish, meats, apples, vegetables, citrus fruits, dried fruits?"

We are not going to put ourselves on record and we are of the opinion that very few cold-storage warehousemen will put themselves on record as to an arbitrary time limit for the products mentioned. There are really too many factors influencing this problem to make it practicable. Eggs can hardly be stored more than a year, and cheese hardly more than 18 months, while poultry, fish, and dried fruits have no ascertained limit of life if properly handled and properly stored. The same is more or less true of meats, while apples and vegetables are both of entirely too variable a quantity to be classed together.

"6. To enable us to offer corroborative evidence on the subject, will you give us such correct data as you may have relative to the length of time the different usual commodities may be stored without deterioration under conditions now prevailing in modern storage houses?"

It will not be possible from actual records to answer this question, as very few warehousemen, if any, have made the actual test of the length of time that goods may be stored as a possible limit. The words "without deterioration" have no place in this question, as it is well known that there are very few goods which can be cold-stored for any considerable length of time without a certain amount of deterioration.

"7. Would you favor a provision that no food products once taken from cold storage and exhibited for sale shall go back into cold storage? If you are opposed to this feature, please state reasons."

Here is another question which is not practical. A provision to prevent storage the second time would seem unnecessary, and there are many cases where it would be advisable and, in fact, absolutely necessary to re-store goods, as, for instance, when they are shipped from one market to another.

"8. Do you oppose labeling articles carried in cold storage, or the packages containing them, with the date of their entry into and their withdrawal from storage? If so, why?"

The labeling of articles carried in cold storage is not reasonable on the face of it, and it is our opinion that no useful purpose could possibly be served by such label. Quality must speak for itself at all times and the labeling would be prejudicial in the eyes of the public, even though the quality were better than goods which had never been in cold storage.

"9. If labeling or marking on entry into storage were compulsory, what, in your judgment, would be a practical mode of labeling or marking the following articles for identification by the purchaser at retail, as to the time such articles were carried in storage: Eggs, butter, cheese, poultry, fish, meats, apples, vegetables, citrus fruits, dried fruits?"

Suggestions as to the detail of labeling take the nature of a practical or mechanical problem rather than a trade or scientific problem and are an after consideration anyway.

"10. Would you favor provision for the infliction of heavy penalties for the removal of marks or labels and the failure to carry them forward to the consumer?"

If a law is passed along the lines above, we are certainly in favor of a heavy penalty for violation of same. Penalties in general are not heavy enough for the violation of law.

"11. Would you favor monthly reports to the Government for publication of the daily receipts and withdrawals of produce at cold-storage warehouses to allay the suspicion that goods are concealed to enhance prices?"

Here is a suggestion which all broad-gauged cold-storage warehousemen will agree to. There are, in fact, but a very few who will oppose the idea of informing the public what they have in cold storage. There is no secret about the cold-storage business. It is a legitimate proposition, pure and simple, and there is no use of making a secret of it anywhere or at any time.

[Extract from Cold, Nov., 1910.]

WHAT IS COLD STORAGE?

What is cold storage anyway? Some people seem to think that there is some mystery about it and that goods placed in cold storage must necessarily be stale and inferior when removed. This argument is used when it is desired to run down the quality of goods coming from cold storage. On the other hand, the argument is used that in order to control prices and markets, goods are placed in cold storage where they may be kept indefinitely or until the prices are right for selling. Cold storage is really a simple thing so far as its general effect is concerned. Goods placed in cold storage are usually held at as low a temperature as they will stand without freezing or damage, and generally speaking a temperature of 30° F. to 32° F., which is about the freezing point of water, is used. A few goods are carried lower and a few higher, but more than three-fourths of the products which are cold stored are carried at about 30° F. In the summer this temperature means cold storage; in the winter what does it mean? It means simply frost-proof storage, as no refrigeration is needed in the North for the maintaining of this temperature. How then are we to discriminate between the cold storage warehouseman and the frost-proof warehouseman, and is there any real difference in their business? Cold storage in summer is really frost-proof storage in winter. Every man's cellar is a cold-storage house in the winter time and he regulates the temperature of same by opening the windows more or less. What is a cold-storage house anyway? Let somebody who is smart enough answer this question, and let the people who propose to legislate for the regulation of cold storage determine what it is, before they pass dead-letter laws. It really does not look to a disinterested person as though a law along the line suggested above would be enforceable from the fact that the term, "cold storage" can not be defined. If any such law were passed it would affect not only the big city cold-storage house, but every man who had a little fruit or a few vegetables in his cellar which he might wish to sell. The proposed law really takes the form of an absurdity.

Unfit foods may be condemned wherever found and ample laws are already on the books to this end. Why then legislate to regulate cold storage?

MADISON COOPER CO.,
REFRIGERATING ENGINEERS AND ARCHITECTS,
Watertown, N. Y., January 3, 1911.

Hon. W. B. HEYBURN,
United States Senate, Washington, D. C.

DEAR SIR: Your favor of the 16th ultimo, acknowledging receipt of our letter with inclosures, is to hand. There are one or two points in particular which from a good practical standpoint I would call your attention.

The first is the proposed requirement of inspection of goods for cold storage. There are hundreds of small cold-storage plants throughout the country ranging in capacity from a single small room, perhaps 10 feet square, up to say 25 or 30 carloads capacity. The impossibility of inspection for these small fellows is apparent, and so far as I can see any law which would require inspection before storage would put them out of business. These little fellows, as a matter of fact, need inspection far less than the big ones, and if it is seriously proposed to require inspection of food products before cold storing same, inspection must be made in every individual plant. If, however, the inspection requirement is limited to the storage of goods for other people, this will answer, I believe.

The second point is the definition of cold storage. I have been connected with the business for some years and hardly think it is possible to define what cold storage is. It might mean a 30° temperature, more or less, regardless of outside natural temperature, but what about the man who carries goods in a frost-proof house at a temperature of 30°, more or less, without any artificial refrigeration whatever, and is an ordinary cellar, for instance, which may be ventilated by opening windows or doors and held at approximately 30° F., or what would be considered a cold-storage temperature any less cold storage during winter than a specially insulated building equipped with mechanical means of refrigerating?

It seems to me that those two points need careful consideration, as I believe that unless some distinction is made somewhere there is likely to be laws passed which will either be impossible of enforcement, or if they are enforced will work such a hardship on those in legitimate trade that they may be declared an infringement on personal rights or interference with trade.

Doubtless you are getting plenty of letters along this line, but believing that I am perhaps qualified to suggest, I am taking the liberty of doing so. I have had some years experience in the actual handling of eggs, butter, and cheese especially, also other produce, and have had to do with the planning of more than 100 different cold-storage propositions, big and little. I have also written and compiled the only work on practical features of cold storage.

If you care to write me further than to the extent of mere acknowledgement of communications, I will be glad to go into the matter with you to any detail which you might desire.

Very truly, yours,

MADISON COOPER.

MADISON COOPER CO.,
REFRIGERATING ENGINEERS AND ARCHITECTS,
Watertown, N. Y., January 10, 1911.

Hon. W. B. HEYBURN,
United States Senate, Washington, D. C.

DEAR SIR: Your favor of the 5th instant duly to hand, and reply has been delayed owing to my absence from the city. I am glad to have an opportunity of writing you again.

So far as I can see it is impossible to separate what you are pleased to call "cold storage" and "refrigeration," and I tried to make this plain in a former letter. Therefore, I am unable to give you the information you ask for. There is no difference, so far as I can see, whether goods are stored in a room artificially cooled or in a room naturally cooled, providing essentially the same results are secured and the same temperature maintained. That is the point I was trying to make in my letter of the 3d instant.

"Cold storage," or "refrigeration," or "storage" may mean something apparently, but they really mean nothing at all except as they are applied to some particular method of keeping perishable food products, and it is my positive opinion that it will be impossible to define or properly designate cold storage, as cold storage, for the reason that there is no distinct dividing line. For instance, what is the difference between ordinary frost-proof storage, such as your own cellar might be in the winter-time by opening of doors and windows for ventilation, and when outside temperature was correct, and so that you might maintain a temperature of about 30° F. to 35° F.; and a modern cold-storage plant where during the same period the temperature might be maintained by artificial means at the temperatures stated? Here are two extremes of the proposition and there are between them all the variations imaginable of methods of storage, from the cellar or frost-proof storage to what is clearly cold storage on a large scale. I am perfectly willing to state that in my opinion there would be no difference in the results obtainable, whether the temperature was maintained by artificial means or by natural conditions. Anyone who will attempt to distinguish is probably not very well posted in the handling and storage of perishable goods.

This matter, of course, may be handled technically, but I am only giving you my opinion of the practical features of the proposition. Having had long experience in the handling of perishable goods and in the planning and construction of refrigerating propositions from a single small room up to a complete modern plant, this point appeals to me very strongly, and I am interested in your understanding my viewpoint so that you may use your influence to prevent an injustice to the small fellow who may perhaps wish to store his own goods, either for his own use or to sell again.

If the above suggestions need further questions I will be glad to hear from you again.

Very truly, yours,

MADISON COOPER.

Among the most valuable information obtained was a statement from a large packing house, in response to an inquiry from the chairman, which was only obtainable on condition that the name of the company would not be divulged. No arrangement having been made that would enable the committee to subpœna these parties and compel them to testify, it was necessary for the subcommittee to resort to the best means possible for obtaining the information. In order to accomplish this result your committee was compelled to secure it through the voluntary action of the parties in response to the request of the chairman and on the promise that the names of the firms would not be divulged, as it was claimed by them that it would be giving their private business to rival concerns.

Information in response to the request of the committee is as follows:

Hon W. B. HEYBURN,
United States Senate, Committee on Manufactures,
Washington, D. C.

DEAR SIR: I am in receipt of your letter of December 29, on the subject of cold storage, and take pleasure in inclosing herewith statement showing information requested so far as we are able to furnish it.

You will notice we stop with sale of product to retailers, for the reason that, as you know, we do not do any retail business and have no figures on this end of the business.

I want to call your attention to the spread between prices paid the producer and charged the retailer:

For instance, taking beef as an example, viz—

	Per cwt.
The amount paid the producer for live cattle on hoof	$3.52
Price of dressed beef sold to retailer	7.33
Spread	3.81

This of course looks, on the face of it, out of line, but you must take into consideration the item of expense to dress this beef with the large item of shrinkage, together with freight and carrying charges in storage, expense of selling, etc., as follows:

	Per cwt.
Using the above example, viz, spread	$3.81
All expenses, including freight, refrigeration, carrying charges, and selling expenses	2.27
Shrinkage of weight in slaughtering, less value of hides and by-products	1.13
	3.40
Leaving a gain of	.41

You will readily see that the margin shown is comparatively small, and still to get the net margin there must be deducted a relative proportion applicable to this particular end of the business for administrative and general expenses, which will reduce it still further.

The above $3.40 is actual money out of pocket either in form of cash or shrinkage.

The results of cold-storage business are very largely speculative, depending on innumerable conditions, such as supply and demand, state of the weather, crops, etc.

For your further information might say we purchase butter from the creameries in the country. Eggs and poultry we purchase mostly from the farmer or country store. Cattle, sheep, and calves we purchase from the live-stock commission men to whom the stock raiser ships.

As pork consists largely of certain special cuts, we are unable to trace it back to the live cost.

While I am glad to give you this information, it is our own results, and we would therefore much prefer that our name be not mentioned in quoting these figures.

If there is any point not perfectly clear will be glad to explain same to you.

Yours, respectfully,

Cold-storage product.

	Butter, per hundred-weight.	Eggs, per 100 dozen.	Poultry, per hundred-weight.	Beef, per hundred weight.	Mutton, per hundred-weight.	Veal, per hundred-weight.	Pork, cut, per hundred-weight.
Paid to producer	$27.15	$18.11	$11.59	$3.52	$4.18	$4.30	.....
Shrinkage grading and slaughtering	.....	.35	1.39	3.12	4.18	3.88	.....
Freight to storage	.52	.90	.52	.....	.....	.....	.....
Expense buying, killing, packing, shipping, refrigeration, etc.	.40	1.20	2.50	.40	.75	.54	.....
Total	.....	.....	.....	7.04	9.11	8.72	.....
Expense milk feeding, 25 per cent, at 2 cents per pound	.....	.....	.50	.....	.....	.....	.....
Less sales value hides and by-products, per hundredweight, dressed	.....	.....	.....	2.07	1.00	2.60	.....
Cost into storage	28.07	20.56	16.50	4.97	8.11	6.12	$7.20
Shrinkage in storage	.15	.....	.08	.04	.05	.05	.05
Storage and carrying charges	1.50	1.94	1.09	.91	1.28	.78	.46
Freight to market	.65	1.15	.75	.35	.35	.35	.39
Expense marketing—handling, selling, delivering, etc.	.61	.92	.61	.61	.61	.61	.61
Shrinkage marketing	.15	.50	.08	.04	.05	.05	.05
Total cost	31.13	25.07	19.11	6.92	10.45	7.96	8.76
Sale to retailer	30.86	25.56	19.32	7.33	10.79	8.53	8.82
Loss per hundredweight	.27	.....	.....	.....	.....	.....	.....
Gain per hundredweight	.....	.49	.21	.41	.34	.57	.06

In response to letters addressed by the chairman of the committee to various persons engaged in or familiar with cold storage, the following have been selected from a large number of letters received, which tend to throw some light upon the question under consideration:

KANSAS STATE BOARD OF HEALTH,
Topeka, April 20, 1910.

Senator W. B. HEYBURN,
Committee on Manufactures, United States Senate,
Washington, D. C.

MY DEAR SENATOR: I am in receipt of your circular letter, with inclosure of Senate bill No. 7649. I can give you no definite data concerning any scientific investigation this department has made in the matter of the wholesomeness or unwholesomeness of cold-storage food products.

I have had, however, a personal experience which is more convincing to me than all the scientific data ever compiled. This experience is substantially as follows: Four years ago I took dinner on a dining car on the Missouri Pacific Railway near Coffeyville, Kans., and ordered a half of a chicken for my meal. I was served with a cold-storage chicken, which produced such an attack of ptomaine poisoning as to almost cost me my life. It was almost six months before I entirely recovered from this severe case of poisoning.

A second experience, which was calculated to be intensely amusing had it not been so serious, was that which occurred at Mackinac Island in August, 1908. It was the occasion of the annual conference of State and National food and dairy officials. The majority of the States were represented, together with a large delegation of Federal officers, headed by our mutual friend Dr. H. W. Wiley. We had been accounting ourselves particularly fortunate that we were in the land, or rather the waters, of the celebrated lake whitefish; and our mouths, metaphorically, watered at the thoughts of the feast that was for us. Whitefish was served on the menu every day; but about the second day it was difficult to assemble enough of the food officials to hold a conference, owing to the fact that almost the entire delegation were suffering with ptomaine poisoning, and some of them seriously ill.

A raid on the steward's pantry by Commissioner Bird, of Michigan, and one of the Federal officials disclosed the fact that they were feeding the food officials on cold-storage whitefish of the vintage of 1907 or older. Any of the food officials present at

that meeting can give you their testimony, which I am constrained to say is also of greater value than mere scientific compilations.

I am heartily in favor of the bill, and I trust that it may be enacted into law.

As you probably know, there will be a meeting of the State and Territorial boards of health in Washington, April 28 to 30, at which time I expect to attend, and no doubt most of the State officials will be there.

Cordially, yours,

S. J. CRUMBINE, M. D.,
Secretary.

STATE OF TENNESSEE,
OFFICE OF PURE FOOD AND DRUG INSPECTION,
Nashville, April 19, 1910.

Hon. W. B. HEYBURN,
United States Senate, Washington, D. C.

DEAR SIR: Referring to your circular letter of the 16th instant, I regret to say that this office has as yet conducted no experiments covering the question of cold storage. I am heartily in sympathy with the objects of Senator Lodge's bill as a sanitary measure. Such articles ought particularly to be labeled with the date of entering storage.

I desire to call the attention of the committee to one practice that has come under my observation, namely, of putting into cold storage fowls from which the entrails and crop have not been removed. This is repugnant alike to refined sensibility and to considerations of hygiene and should be prohibited.

Truly, yours,

LUCIUS P. BROWN.

COMMONWEALTH OF VIRGINIA,
DAIRY AND FOOD DIVISIONS,
Richmond, April 20, 1910.

Hon. W. B. HEYBURN,
Chairman Committee on Manufactures,
United States Senate, Washington, D. C.

DEAR SIR: I am in receipt of your letter of the 16th instant inclosing copy of a bill introduced into the Senate of the United States for the purpose of controlling the sale of cold-storage products, etc. This matter is one which would have to be considered very carefully, as the length of time allowed for holding food products in cold storage depends upon two things: first, the conditions in which such products might be when placed in cold storage and second, the temperature maintained during the time in which such products may be held, and further the condition of the rooms for the storage of such products, provided products may be exposed to such contamination. Some products which are put into cold storage are not desirable for food products at the time they may be placed in such storage, while in the case of other products they may have been in cold storage for quite a long time and on account of the condition such products may have been in when placed in storage, and the temperature maintained and condition of rooms during time of such storage, as to be practically unchanged after quite a considerable period and in far better condition than other products which may have just been placed in such storage. I must confess that to allow products to be held as long as a year seems to me would nullify any object which this law may have in connection with a control of cold-storage products, because there are few things which are held in storage for any such length of time as that and I would think that there would be certain amount of deterioration in the case of articles exposed, principally evaporation, that would reduce the value of such articles to such an extent as would make it undesirable to store such products for such periods. Poultry for instance, will shrink to quite a considerable extent when held in cold storage for long periods, due simply to evaporation, even when frozen the entire time. The same would be true as to meats and other products where evaporation might occur. The ice deposited on exposed pipes is largely due to the moisture which arises from the surfaces of such matter as may be placed in cold-storage rooms and in the course of several months this deposit on the pipes amounts to quite a considerable matter. In one case I can recall where possibly 500 or 600 pounds of ice had been deposited on brine pipes in a room of about 6 by 12 which was largely due to evaporation from milk cans containing milk which was stored in said room from time to time. I am thoroughly in sympathy with the provisions of this bill, but it seems to me that your bill will possibly be inactive if the limit allowed is as much as a year for holding products in cold storage. I am also heartily in sympathy with section 2 as to placing a label on each package stating the time when said article was placed in cold storage,

but the difficulty of knowing whether such labeling is correct or not must be evident to you, also the difficulty of dealing with such a proposition. After all I am afraid that the condition of the products in cold storage at such times as examinations may be made will be the only index as to the control of such food products.

Thanking you for sending me copy of this bill and hoping that what is done will be for the good of the pure food work, I remain,

Yours, very truly,

WM. D. SAUNDERS,
Dairy and Food Commissioner.

T. M. SINCLAIR & CO. (LTD.),
Cedar Rapids, Iowa, May 2, 1910.

The Hon. SENATOR HEYBURN,
Chairman Committee on Manufactures, United States Senate,
Washington, D. C.

DEAR SIR: As per your request, I give you herewith two memoranda showing the description of certain meats placed in freezer storage, indicating the date on which these were put in, the dates on which they were taken out, and the number of days during which they were in the freezer. I understand that this is the information which you wish.

One of these shows the meats put into public warehouses in Chicago; the other shows the meats put into cold storage in our own freezer on our plant here.

In the latter list all are for an outside market, with the exception of the beef tenders, hog tenders, and beef sausage meats, which are for our own business. These lists are all selected out of our entire records as showing the greatest length of time in storage.

Yours, truly,

R. S. SINCLAIR.

Exhibit from records of stock frozen in public warehouse in Chicago, selected to show longest time in storage frozen.

Description.	Pounds.	Date in.	Dates out.	Days in.
18 baskets tail bones	450	Jan. 4, 1908	Nov. 17, 1908	317
			Nov. 18, 1908	318
35 baskets pig tails	875	Mar. 9, 1908	Aug. 28, 1908	172
			Oct. 12, 1908	217
			Nov. 5, 1908	241
5 barrels hooks	1,471	Mar. 14, 1908	Oct. 12, 1908	212
			Oct. 13, 1908	213
			Jan. 14, 1909	306
			Jan. 15, 1909	307
103 baskets spare ribs	2,575	Apr. 16, 1908	Sept. 30, 1908	167
			Oct. 1, 1908	168
			Oct. 2, 1908	169
			Nov. 17, 1908	215
			Dec. 4, 1908	232
20 pails pork tenders	500	May 16, 1908	Oct. 9, 1908	146
	1,000	June 10, 1908	Sept. 29, 1908	111
			Oct. 1, 1908	114
			Oct. 6, 1908	119
57 baskets spare ribs	1,425	June 20, 1908	Feb. 18, 1909	243
			Feb. 27, 1909	252
			Mar. 12, 1909	265
			Mar. 24, 1909	277
			Apr. 28, 1909	312
7 baskets tail bones	175	Sept. 23, 1908	Feb. 4, 1909	134

Items from stock records—Freezer storage.

Description.	Amount.	Date in (various dates).	Date out (various dates).	Number of days in stock.
Calves' heads.....pieces..	3	May 27, 1909.....	Dec. 21-22, 1910.....	208-242
Calves' feet.....do....	14	.....do.....		
Lamb fries.....do....	202	Oct. 8-Dec. 29, 1909.....	Jan. 7-Apr. 1, 1910.....	91-106
Beef tenders.....pounds..	852	June 19-Dec. 23, 1909.....	Dec. 2, 1909-Apr. 25, 1910..	55-167
Hog tenders.....do....	2,529	June 14-18, 1909.....	Jan. 25-Mar. 10, 1910.....	225-266
Beef for sausage meat.....pounds..	26,916	Sept. 29-Dec. 10, 1909.....	Feb. 25-Apr. 26, 1910.....	150-183
Spring chickens.....do....	271	Aug. 10-12, 1909.....	Jan. 6-Apr. 2, 1910.....	149-235
	498	Sept. 23, 1909.....	Feb. 14-Mar. 23, 1910.....	144-181
Black bass.....do....	344	Nov. 3-9, 1909.....	Mar. 4-Apr. 27, 1910.....	121-175
Pigs (dressed).....do....	192	Dec. 16, 1909.....	Apr. 27, 1910.....	132

BUREAU OF CHEMISTRY, DRUG LABORATORY,
Washington, D. C.

Senator W. B. HEYBURN, *Washington, D. C.*

DEAR SIR: I have your communication inviting me to attend a hearing on the cold-storage bill Friday, the 20th instant. I regret to say that my work at the Bureau of Chemistry makes it impracticable for me to get away at the time mentioned.

I will therefore recite briefly some experience I had last winter as State chemist in Washington. Mr. Davies took a number of samples of fowl out of cold storage and submitted them to me for analysis. Bacteriological tests showed practically all samples to be unfit for use and about 10 tons of the material was destroyed. It was learned that most of the fowl had been in storage from three to six years. It was also learned that it was the practice of the owners of this material to place certain quantities on the retail market where they were thawed and exposed for sale. If not sold at a given price they were brought back to cold storage and frozen. No one knows how often a given fowl had been through this process. It should be mentioned that in a frozen condition the fowl had a bad appearance, but when slowly thawed in cold water it would take an expert to tell it from fresh material, even though a bacteriological test would show it unfit for use.

The enactment of a law such as the one proposed would assist in getting similar laws in the various States, and so prevent experiences such as recited above.

Mr. Davies, the dairy and food commissioner of Washington, requested me to give you the benefit of our experience, and joins me in expressing a hope that this bill, or one giving even less time for storage, may become a law.

Very respectfully,

CHARLES W. JOHNSON.

The following statement was received by the subcommittee from a correspondent:

The United States has 800 cold-storage plants, costing $150,000,000, with a capacity of 160,000,000 cubic feet of storage.

In 1909 foodstuffs were stored to the value of $2,500,000,000. They were apportioned as follows:

Meat and pork products	$1,500,000,000
Butter, eggs, and poultry	600,000,000
Fish, game, beer, etc	400,000,000
Total	2,500,000,000

About all the labor required in the cold-storage business is at the beginning of each session. The operating expenses for the entire year will scarcely amount to half the annual earnings.

Investment	$150,000,000
Operating expenses	62,500,000
Earnings	62,500,000

Packages can be handled at an average of $10 each. Total storage of 250,000,000 packages, $2,500,000,000. A revenue of $0.002 per dollar on stored goods will amount to $5,000,000 per annum.

Put the storage plants under Government supervision, eastern and western divisions under a chief with an inspector for each plant. Then have a captain for every 10 inspectors, and a supervisor for every 100 supervisors, with salaries as follows:

800 inspectors, at $1,200 per annum	$960,000
80 captains, at $1,800 per annum	144,000
8 supervisors, at $3,000 per annum	24,000
2 chiefs, at $5,000 per annum	10,000
Office, mileage, and incidentals for above 890 men, at $500 each	455,000
Total expenditures	1,583,000

If $5,000,000 is collected and $1,583,000 is expended by the Government in its supervision and inspection, there is a net profit of $3,417,000 per annum left.

To eliminate manipulations in storage goods and to protect the public from being the victim of manipulators, speculators, and crooks the Government must impose the above-mentioned revenue of $0.002 per dollar on all stored foodstuff, and every package, box, barrel, or parcel which is used for cold storage must have a revenue stamp similar to those on beer and cigars at the present time.

Stamps should be no less than 6 inches square with plain large letters stating the day it was received and the day it left cold storage. The stamps must always be placed in full view of the purchasing public, and not destroyed or removed until contents are disposed of, and said holder, carrying box, barrel, or wrapper which contains stored foodstuff should not be used again, as is the case with cigar boxes, under the penalty of imprisonment and fine.

Naturally the entire public has an abhorrence for cold storage food, therefore every housewife is always seeking to purchase fresh foodstuff and is paying for such; but 75 per cent of the foodstuff purchased is held in cold storage. This is where the public is an innocent victim of manipulators who impose a tax of $5 per person annually on all people of the United States of America.

The above computations plainly show that it is an imposition upon a misrepresentation to the public, by which 75 per cent or more is charged for everything you eat, and it amounts to nearly $400,000,000 per year unlawful gain by trusts.

The following statement as to the food products condemned is in point:

According to reports issued by the department of health of New York City for 1909, there were 1,802,230 pounds of meat, 838,226 pounds of fish, 239,092 pounds of poultry and game condemned, making a total of 2,879,608 pounds of meat products condemned. There were also 8,600,174 pounds of fruit and 7,311,756 pounds of vegetables condemned, making a grand total of 18,791,538 pounds of food condemned last year in the city of New York.

As similar conditions exist in all other cities, a conservative figure would indicate that millions and millions of dollars' worth of food are condemned annually, merely because of the violation of hygienic laws and improper preservation. All such destruction of food materially adds to the cost of living.

It is evident, therefore, that one of the most essential features toward a reduction in the cost of living is the proper preservation of all food products during the process of growth, after the harvests are gathered, and until prepared for the table of the consumer.

The question of the proper handling of poultry and game in connection with its preservation in a healthful condition has heretofore been given consideration in connection with an inquiry that was instituted by the Committee on the District of Columbia in Senate Report 1991, Fifty-ninth Congress, first session, and the committee, in view of the facts developed at the hearing, herein incorporate a copy of the report:

SALE OF POULTRY IN THE DISTRICT OF COLUMBIA.

The Committee on the District of Columbia, to whom was referred the bill (S. 4982) relating to the sale of poultry in the District of Columbia, having considered the same, report thereon with a recommendation that it pass.

The sale of undrawn poultry, fish, game, etc., is attracting the serious attention of the sanitarians of the country, the Chicago department of health being especially active in an effort to suppress the practice. In a recent issue of the Virginia Medical

Semi-Monthly, published at Richmond, the matter is discussed at length, and Dr. J. C. Hemmeter, of Baltimore, in an article in the Maryland Medical Journal of June, 1905, called attention to the necessity that exists for laws by all State and local governing bodies that will abate or control this danger to the public health. The bulletin of the department of health of Chicago, after recommending that an ordinance shall be passed by that city on the subject, which shall also require cold-storage warehouses to be regularly inspected with a view to keeping them in sanitary condition, and also requiring all articles put in cold storage to be tagged so as to show the date at which they were so placed, says:

"The body in which the viscera are permitted to remain undergoes decomposition much more rapidly than when such viscera have been removed. Decomposition is further hastened by leaving the blood in the animal. Cold storage and freezing may limit the rotting process, but do not stop it. When poultry or animals are taken from cold storage and thawed out for exhibition and sale the decomposition continues with renewed energy, impregnating the flesh with poisons."

The Virginia Medical Semi-Monthly comments on the above as follows:

"Surely no argument is necessary further than a plain statement of facts to convince one of the need of such laws as will tend to mitigate or altogether do away with the objectionable as well as dangerous features known to exist, especially in cities, with reference to marketing of slaughtered poultry, fish, game, etc., which have not been dealt with as before suggested. The question of health affects not Chicago or Baltimore alone, but every community, and it is but natural to expect that those who have charge of matters pertaining to the health of communities should see to it that laws are advocated and strenuously urged until they become enacted for the public good."

Under date of February 7, 1906, the Illinois State Board of Health issued the following bulletin:

"The Illinois State Board of Health, acting in the interest of the lives and health of the people, urgently recommends to the mayors and councils of all cities and the presidents and boards of trustees of all villages, and to the health officials in all parts of the State, the enactment and enforcement of ordinances prohibiting the sale of poultry, fish, game, or any animal used for food which have not been properly drawn and cleaned at the time of slaughtering.

"The necessity for such ordinances and their enforcement is plainly indicated by the rapidly-growing custom of storing poultry, fish, and game containing the entrails and other viscera, and offering them for sale long periods of time after being killed, and the danger to the public health caused by this custom.

"It is known to all physicians and physiologists that there are generated in the body of any animal poisons of the highest degree of toxicity. The intestines and other digestive organs contain at all times materials which have undergone putrefactive changes. If this material be permitted to remain in the body after death, the poisons generated may infiltrate the entire flesh, making it dangerous to the person who eats it. The body in which the viscera are permitted to remain undergoes decomposition much more rapidly than when such viscera have been removed. Decomposition is further hastened by leaving the blood in the vessels of the body.

"On this point the United States Department of Agriculture, in Bulletin No. 144, speaks as follows:

"'Under precisely the same conditions of temperature and humidity, drawn fowls will keep from 20 to 30 days longer than those not drawn. The presence of undigested food and of excrementitious substances in animals which have been killed most certainly favors the tainting of the flesh and general decomposition. The viscera are the first parts to show putrescence, and allowing these to remain within the body can not do otherwise than favor infection of the flesh with bacteria and ptomaines, even if osmosis does not actually carry putrid juices to contiguous tissues. Hunters know the value of drawing birds as soon as possible after they have been shot, in order to keep them fresh and sweet and to prevent their having a strong intestinal flavor.'

"It has become a custom among wholesale poulterers and packers to purchase poultry during the early summer, when the prices are lowest, and to keep them in cold storage until winter, or until prices are at the highest. Such fowls are killed without thorough bleeding, often plucked before death, and placed in cold storage, without removing the entrails and other viscera. Frequently they are not offered for sale until many months after killing.

"The process of decomposition and putrefaction begins at once after the death of the animal. Cold storage and freezing may limit the rotting process, but do not entirely stop it. When poultry or animals are taken from cold storage and are thawed out for exhibition and sale, the decomposition continues with marked

energy, impregnating the flesh with poisons—and this decomposition is exceedingly rapid even when the poultry is kept in the market or grocery refrigerator, the temperature of which is much higher than that of the cold-storage warehouse. Flesh in which the blood has been permitted to remain is particularly susceptible to such decomposition, and this susceptibility is increased by the long period of freezing and thawing.

"Even with poultry which is 'freshly killed' there is frequently a period of several days between the time of slaughtering and sale. Not only is it dangerous, but it is repugnant to our sense of decency, that the flesh we are to eat shall lie for several days in close contact with putrefying animal matter.

"Undoubtedly undrawn poultry, fish, and game have caused many cases of poisoning which have been wrongfully attributed to other sources. The poisoning resulting often resembles that caused by other poisons administered by persons or taken with suicidal intent. Many sufferers from digestive troubles—headache, nausea, colic, and diarrhea after eating, owe their ailments to tainted foods.

"We are advised that the reason for slaughtering poultry without thorough bleeding is the saving in the weight of the fowl, and this reason is doubtless also one for the storing of poultry and offering it for sale without removing the viscera. There is, however, no reason why the consumer should be compelled to purchase a large percentage of excreta, offal, and refuse with his poultry. We would not tolerate the addition of a certain percentage of weight in the form of entrails of the steer with each beefsteak we buy. The consumer purposes to buy edible food and not the disgusting waste which should be eliminated in the process of slaughtering and dressing. It is just as reasonable to ask the consumer to buy hogs, calves, and lambs without the intestines removed as to solicit his purchase of undrawn turkeys and chickens.

"The protection of the people of a municipality from these dangerous and repulsive foods lies within the jurisdiction of its own officials. The State board of health consequently urges that such ordinances covering this subject shall be encated as will give to the people the degree of protection to which they are entitled.

"Not only should proper ordinances be enacted and enforced, but the people should also be advised to carefully inspect the fowls they buy and take none which have been kept in storage with the entrails unremoved."

To at least partially correct this evil in the District of Columbia, where cold storage is employed to a great extent, the bill (S. 4982) was introduced. Following the usual custom, it was referred to the Commissioners of the District of Columbia for their examination and report, and they made reply as follows:

OFFICE COMMISSIONERS OF THE DISTRICT OF COLUMBIA,
Washington, March 15, 1906.

DEAR SIR: The Commissioners of the District of Columbia have the honor to approve Senate bill 4982 of the present session, "relating to the sale of poultry in the District of Columbia," which was referred to them at your instance for their reply as to its merits, but, on condition that it be amended by inserting after the word "slaughter," in line 7, section 1, the words "unless the crop and entrails are substantially free from food and from the remnants thereof," as suggested by the health officer in his report, a copy of which is herewith inclosed, and upon which the Commissioners base their recommendation. A copy of the bill, amended as recommended, is herewith inclosed.

Very respectfully,

HENRY B. F. MACFARLAND,
President Board of Commissioners District of Columbia.

Hon. J. H. GALLINGER,
Chairman Committee on District of Columbia, United States Senate.

The letter of the health officer is in these words:

HEALTH DEPARTMENT OF THE DISTRICT OF COLUMBIA,
Washington, D. C., March 14, 1906.

DEAR SIR: Referring to a bill relating to the sale of poultry in the District of Columbia (S. 4982), I have the honor to submit the following report:

The sole purpose of this bill is to prohibit the sale within the District of Columbia of any poultry which has not been properly drawn and prepared by removing the viscera at the time of killing. The proposed prohibition on the sale of undrawn poultry is presumably based upon the belief that the consumption of poultry that is marketed prior to the removal of the viscera causes disease, and possibly upon a supposed likelihood of fraud or unfairness through the sale of poultry in that condition.

A belief in the unwholesomeness of undrawn poultry as an article of food is not infrequently met with, and the common basis of the belief seems to be the supposedly rapid putrefaction of undrawn fowls. Even, however, if it be admitted that such fowls decompose more rapidly than do fowls from which the viscera have been removed, no question relating to public health arises for consideration. The dealer is able to hold his drawn poultry for sale for a longer period than he is to hold that which is undrawn, but it does not appear that the consumer is more likely to buy a putrid fowl containing the viscera than to buy one that has been eviscerated. The question is essentially commercial.

A more rational basis for objection to the marketing of undrawn poultry would be the supposed development in the bodies of such poultry of peculiar decomposition products resulting from contamination by the intestinal contents. If this basis for the belief exists it does not appear to have been definitely formulated, and even if the danger were real it will be seen later that the removal of the viscera does not avoid it.

From a sanitary standpoint the two conditions set forth above represent, so far as I can discover, the only objections that can be raised by the advocates of this bill to the sale of undrawn poultry, and, therefore, if the enactment of this measure is to be recommended in the interest of public health, the recommendation must be based upon the fact that the removal of the viscera from poultry at the time of killing it will retard decomposition or prevent the formation of certain specific dangerous decomposition products. It is essential in determining whether these results will ensue to fix in mind the nature of the putrefactive process and the immediate consequences of the removal of the viscera.

Putrefaction occurs only in the presence of warmth and moisture, and is due to substances generally termed ferments, derived from certain forms of bacteria, and possibly to a certain extent from the tissues of the body itself. The most favorable temperature for the action of these substances is between 70° and 104° F. At or below freezing point and at and above boiling point their action ceases. Whether the products of putrefaction are or are not poisonous when ingested depends upon the nature of the putrefying body and upon the nature of the active ferment.

The immediate results of removing the viscera from a fowl directly after killing it are as follows:

1. Cooling is hastened (*a*) by reason of the removal of the warm viscera and the consequent reduction in the bulk to be cooled, and (*b*) by reason of the exposure to the cooling influences of the surrounding air of a surface very much larger in proportion to the mass remaining to be cooled than is the surface of an undrawn fowl to the entire body.
2. Certain foreign matter, the contents of the intestinal tract, is removed.
3. The surfaces of the cavities from which the viscera are removed are exposed to contamination in the process of evisceration and in the subsequent handling of the body.

It is manifest from the foregoing statement that the removal of the viscera from the body of a fowl immediately after killing it will, by hastening the cooling process, tend to retard putrefaction. Whether it will do so, however, to a degree that will make a material difference in the keeping qualities of the bird is not so certain. The ordinary fowl is comparatively small. After being thoroughly bled, as it usually is as an incident to the killing, and after being plucked, the loss of heat progresses with considerable rapidity, and it hardly appears probable that the increase in the dissipation of heat resulting from the removal of the viscera is under ordinary conditions at least a matter worthy of serious consideration.

It has already been pointed out that the nature of decomposition products varies with the enzymes by which putrefaction is produced, and conceivably the enzymes incident to the presence of undigested food in the alimentary canal of the dead fowl may produce decomposition products differing from those that are formed under other circumstances. But it by no means follows that the decomposition products present in the undrawn fowl are more dangerous than those in the eviscerated bird. They may be less dangerous. Probably they vary with variations in the food in the digestive tract.

The decomposition products in undrawn poultry can not, however, be very dangerous, otherwise there would not be such a noticeable dearth of reported cases of food poisoning in which the victims had eaten poultry, nor an almost entire absence of literature concerning the relative advantages of the marketing of fowls drawn and undrawn.

In the rather hurried and admittedly incomplete investigation which has been made incident to the preparation of this report references have been found to cases of poisoning resulting from the consumption of beef, veal, and pork in various forms,

but no case was met with in which the occurrence was traced to the eating of poultry. Nor is game, such as is uniformly marketed undrawn, charged, so far as I am informed, with any undue responsibility for cases of food poisoning, and that notwithstanding the practice of some gourmands of eating certain varieties "high." And the same may be said of the smaller varieties of fish, such as are always brought to market without the removal of their viscera. On the whole, therefore, it seems to me that the presence of viscera and of other contents in the bodies of poultry, game, and fish can not be said to be in itself dangerous. It may, however, be safely said that there is no substantial reason for believing that the presence of the intestinal contents is of any sanitary advantage, and certainly they are objectionable from an æsthetic standpoint.

The last point to be considered, so far as the sanitary aspects of the case are concerned, is the effect of laying bare a very large area of the interior of the body, which necessarily results from the removal of the viscera. The naturally exposed surfaces of the body are made up of structures well adapted to prevent putrefactive organisms from entering the tissues either during life or after death, and therefore so long as these surfaces remain unbroken the structures of which they are composed tend to prevent and to delay decomposition. Surfaces of the body that are exposed artificially are, however, not adapted to that end; nature did not design them with any such purpose in view; hence in any case decomposition proceeds more rapidly through a raw surface than through the unbroken skin. So, after the removal of the viscera, the inner surfaces of the thoracic and abdominal cavities afford convenient lodging places for the putrefactive organisms and offer favorable conditions for their growth.

Nor is this all. The ordinary process of evisceration as carried on in establishments where fowls are killed in large numbers for market favors the contamination of these raw surfaces with objectionable substances of the most varied kinds, including the contents of the intestinal tract. Whatever benefit may be derived from the removal of the viscera at the killing place is therefore to a greater or less degree neutralized by the manner in which such work is necessarily done.

It has recently been stated in the public press, apparently on the authority of one of the Federal bureaus, that experiments have demonstrated that drawn poultry will keep untainted for a longer period than will poultry that is undrawn. These results are, however, directly at variance with the results of experiments made under the direction of one of my predecessors in office. In the absence of definite information as to the conditions under which both series of experiments were conducted it is impossible to reconcile the conflicting results. It is a known fact, however, that the condition of the animal body at the time of death influences very largely the rapidity of decomposition, and no experiments to determine the results of external conditions on the rapidity of decomposition can be satisfactory unless the utmost care be taken to use for purposes of comparison bodies in as nearly the same physical condition at the moment of death as it is possible to obtain them. Time has not permitted nor money been available for the making of any experiments by this department prior to reporting upon this bill.

So far as I am informed no commercial necessity exists for the enactment of the proposed legislation to prohibit the sale of undrawn poultry. The matter seems to regulate itself. A citizen who desires to use drawn fowls can purchase his poultry in that condition, and the citizen who desires fowls undrawn can obtain them. Prices are based upon the condition in which the fowl is sold, and there is little or no opportunity for the purchaser to be deceived with respect to the condition of the article purchased.

Summary.—1. Whether undrawn poultry decompose more rapidly or less rapidly than does drawn poultry is, from a public-health standpoint, immaterial. The question is, Will or will not the consumer be more likely to purchase and use a decomposed fowl that is undrawn than he is to purchase and use one that is drawn? There is no reason to believe that he will be more likely so to do.

2. The removal of the viscera from poultry immediately after it is killed tends to hasten cooling and thus to retard putrefaction, but probably not to a material degree.

3. There is no sufficient reason for believing that the presence of the intestines or of the intestinal contents in the undrawn fowl is essentially dangerous. There is, however, no reason for believing that it is of any advantage to have the intestinal contents remain in the body, and from an æsthetic standpoint their presence is objectionable.

4. The contamination of the inner surfaces of the abdominal and thoracic cavities, incident to the hurried removal of the viscera from large numbers of fowls at poultry-killing establishments and under similar circumstances, and incident to the subsequent handling of such poultry, tends to promote decomposition.

5. The advisability or inadvisability from a commercial standpoint of marketing poultry drawn rather than undrawn can safely be left for determination by ordinary commercial processes.

Recommendations.—In view of the facts set forth in the foregoing statement, it is respectfully recommended that this bill be returned to the Senate Committee on the District of Columbia with a recommendation that it be amended by inserting after the word "slaughter," in line 7, the words "unless the crop and entrails are substantially free from food and from the remnants thereof," and that upon the bill as thus amended a favorable report be made.

Respectfully,

WM. C. WOODWARD, M. D.,
Health Officer.

Hon. HENRY B. F. MACFARLAND,
Commissioner District of Columbia.

Not content with giving his official views, in an eight-page typewritten letter, to the commissioners, to be transmitted by them to this committee, the letter of the health officer was given to one of the leading newspapers of Washington in which it was printed under the caption of "No demand for law."

It will be observed that the health officer's letter raises several important questions. He calls attention to the "almost entire absence of literature concerning the relative advantages of the marketing of fowls drawn and undrawn," but in the light of his lengthy and decidedly contradictory contribution it will not be possible for anyone to say hereafter that literature is wanting on the subject. The most casual reading of the health officer's communication will show that it is a plea for the defendant, the commercial aspects of the case being given prominence over every other consideration. "The question is essentially commercial," says this guardian of the public health, and that, too, at a time when the health officials of other cities are seriously concerned over the effect on human health of poultry and animals killed and refrigerated without first having their entrails removed. True, the health officer admits that from an esthetic point of view drawn poultry is preferable to undrawn poultry, and it is encouraging to even secure that admission from him.

The health officer further says:

"So far as I am informed, no commercial necessity exists for the enactment of the proposed legislation to prohibit the sale of undrawn poultry. The matter seems to regulate itself. A citizen who desires to use drawn fowls can purchase his poultry in that condition, and the citizen who desires fowls undrawn can obtain them."

Precisely so. The citizen who desires to use tainted meat or decayed vegetables can be accommodated in the markets of any American city, but laws or city ordinances step in and say that it shall be unlawful to sell tainted meat or decayed vegetables to anyone. This is not a question of choice, nor of commercial considerations, but of health, and nothing else, and the matter will be decided on that issue alone. On that point the health officer seems to be all at sea, as will be seen from a careful reading of his opinion.

Finally, the health officer, driven to the conclusion that there is something wrong with undrawn poultry, proposes to solve the problem by inserting the words "unless the crop and entrails are substantially free from food and from the remnants thereof," and it is stated by the newspaper that printed the letter that the health officer proposes to accomplish this by starving the fowls for a time before killing. If this procedure could possibly remedy to any appreciable extent the evil complained of, it remains to inquire just how the purchaser is to ascertain whether the condition described actually exists. Manifestly this is impracticable; hence this suggestion fails to solve the problem and is not worthy of serious consideration.

Impressed with the importance of the proposed legislation, your committee recommend the passage of the bill after being amended as follows:

In line 5, after the word "Columbia," insert the words "or ship into said District."

Amend the title so as to read: "A bill relating to the sale of poultry in the District of Columbia, and for other purposes."

The committee have thought it advisable in order to avoid reprinting much data relative to the subject of cold storage that is already available in the shape of publications and public documents only to refer to them as having been considered by the committee. They are submitted by reference as a part of this report and are as follows:

DOCUMENTS PERTAINING TO COLD STORAGE.

1. Use of Cold Storage. Data submitted by Dr. Wiley as contained in Senate Document No. 486, Sixty-first Congress, second session.
2. Effects of Cold Storage on Eggs, Quail, and Chickens. Bulletin No. 115, Bureau of Chemistry, Department of Agriculture.
3. Directory of the Bureau of Animal Industry. Market Inspection—Names and Numbers of Cities Where Maintained.
4. Studies on Apples. Storage, respiration and growth. Bulletin No. 89, Department of Agriculture.
5. Studies on Peaches. Effect of storage on composition of peaches. Bulletin No. 97, Bureau of Chemistry, Department of Agriculture.
6. American Warehousemen's Association. Bulletin No. 122. April, 1910. List of cold-storage plants and character of goods stored.
7. Proceedings First Annual Meeting of the American Association of Refrigeration.
8. Changes Taking Place in Chickens in Cold Storage. By Mary E. Pennington, Bureau of Chemistry, Department of Agriculture.
9. Commercial Status of the Refrigeration Industries in the United States.
10. Cold Storage of Apple Cider. Circular No. 48, Bureau of Chemistry.
11. List of Officials Charged with Enforcement of Food Laws in United States and Canada. Circular No. 16, Bureau of Chemistry.

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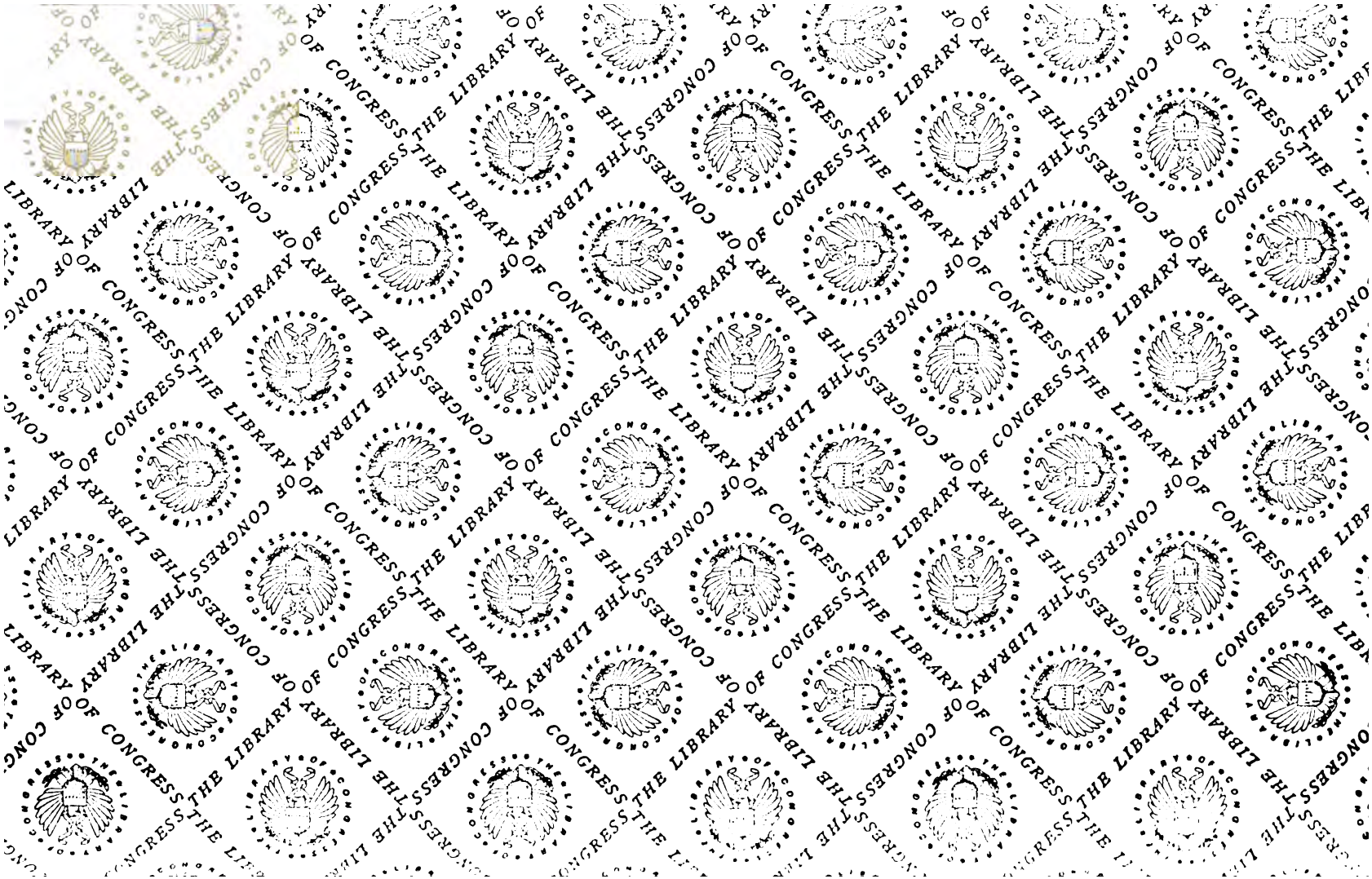
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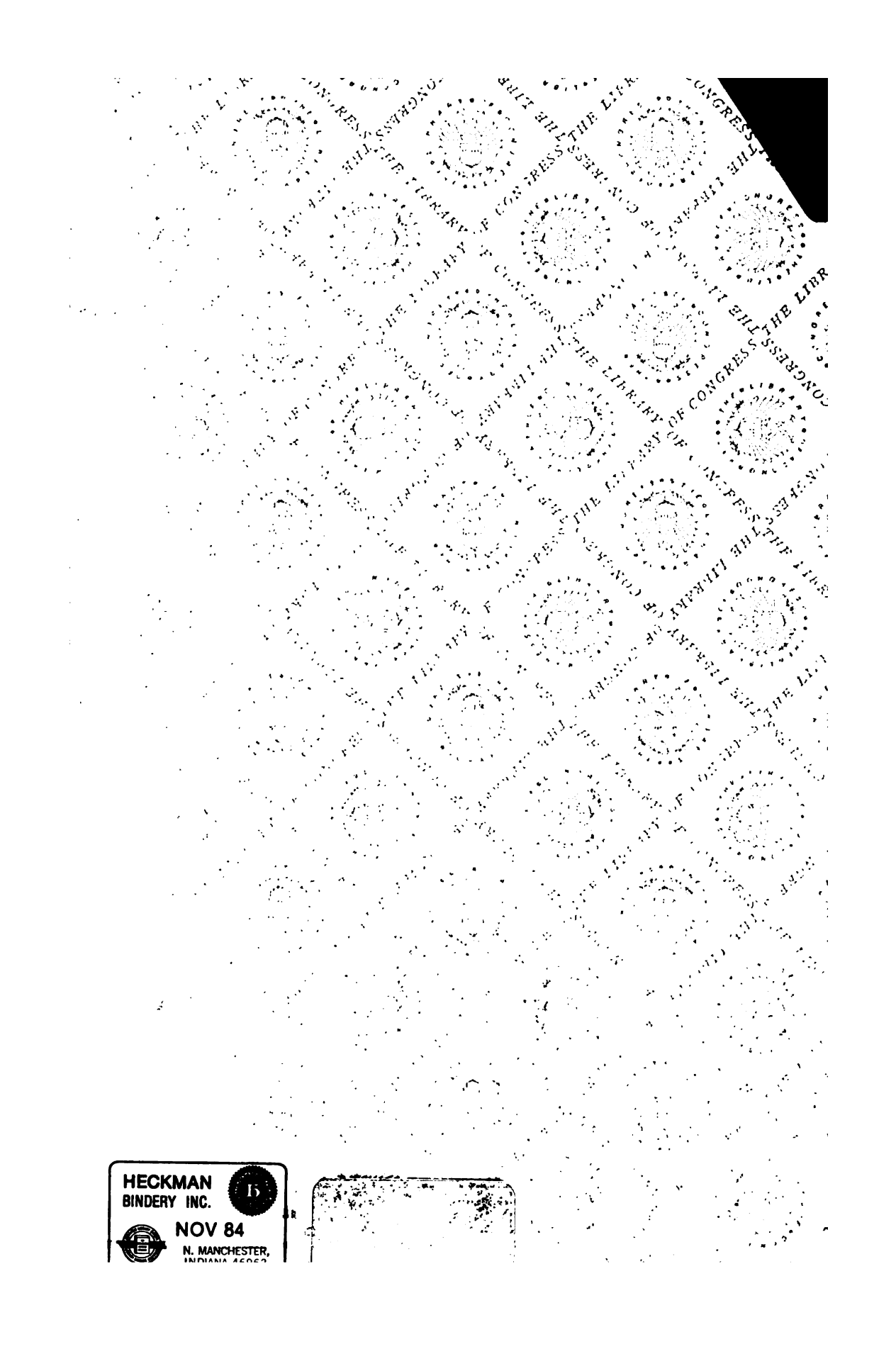

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